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AVIATION COUNTRIES BO SECOND | WORLD WAR

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The book Axis Aviation in World War II is an encyclopedia of aircraft used by the BOCHHO-BO3 forces of Germany, Italy, Japan and their allies during World War II against the countries of the 'anti-Hitler coalition'. The authors provide brief information about the history of the development of the Air Force of the Axis countries in the pre-war period and during the war, about the companies that developed aviation technology, the characteristics of aircraft and information about the combat operations in which they were used. A large number of diagrams, drawings and photographs will help the reader to get a better idea of the bloodiest war in the history of mankind.

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INTRODUCTION

With the coming to power of the Nazis, Germany began an active search for new political partners on the world stage. The result of these actions was the alliance concluded in October 1936 with Italy, which was called the Berlin-Rome Axis. A year later, Germany concluded the so-called Anti-Comintern Pact with Japan, to which Italy also joined. Uniting politically, all three countries rapidly developed their armed forces, among which aviation occupied a special place.

The activities of the German Air Ministry (RLM) created in 1935 in violation of the Treaty of Versailles had an openly militaristic orientation from the very beginning, TK of its seven departments, only one department dealt with issues related to the development of civil aviation. Under the leadership of the RLM, the German aircraft industry began to grow rapidly, which was supported by the allocation of preferential loans to already existing aviation firms, the nationalization of some enterprises and the stimulation of newcomers in the transition to the production of aviation equipment. Heavy industry enterprises were involved in the production of aircraft, original concerns were created with a strong production base and experienced design teams.

Following the example of the Germans, the top leadership of Italy in 1938 adopted the "Program K", the purpose of which was the quantitative growth and qualitative renewal of Italian aviation. It was assumed that as a result of the implementation of competitive

programs in service with the Italian BBC by the end of 1939 will be about 3,000 combat aircraft, not inferior to the best foreign models.

In the period from 1932 to 1937, there was a significant modernization of Japanese aviation, but the government in the 30s. kept secret information about the development of aircraft manufacturing in the country and limited its press to coverage of the production activities of aviation firms.

In 1940, the triple alliance between Germany, Italy and Japan was formalized by a military treaty, according to which Germany and Italy were assigned the leading role in creating the "new order" in Europe, and Japan in Asia. During the same and the following year, Hungary, Romania, Slovakia, Croatia, Bulgaria and Finland joined the Berlin-Rome-Tokyo axis, although the latter was formally a neutral country.

By the time the treaty was concluded, all three leading Axis powers had taken part in hostilities. Italy in 1935--1936 occupied Ethiopia (to a large extent, the activity of Italian aviation affected here), in 1936-1939. Together with Germany, she participated in the Spanish Civil War on the side of the Francoists, and in April 1939 she occupied Albania. Japan managed to make war with China and with the Soviet Union (on the Khalkhin-Gol River and near Lake Khasan).

Germany attacking Poland | September 1939, unleashed the Second World War, on September 3, England and France declared war on Germany, but it was too late - Poland was completely captured by September 17. Until the spring of 1940, England and France were conducting very cautious military operations against Germany (this period in history is called the "strange war"): the few bombing raids that their air forces carried out met with failure, and many efforts were made. spent on extremely senseless dropping of proclamations. In Asia, Japanese aircraft fought in China, encountering little resistance from the Chinese.

In April 1940 Germany used air superiority to overwhelm Denmark and Norway, and in May German troops invaded Holland, Belgium and Luxembourg. Italy entered World War II on June 10

1940, having declared war on France, HO on June 22, France had already capitulated, which was a considerable merit of German aviation. After this, Germany attempted to gain air superiority during the Battle of England. However, it turned out that the Bf 109, He 111, Po 217, Ju 87 and Ju 88 aircraft, which were good for solving problems on the continent, were not very prepared for a strategic bombing campaign. Having failed in the Battle of England, the Luftwaffe turned to the idea of night bombing of British cities. Japan began its occupation of Indochina in a desire to get closer to the oil and mineral resources of Southeast Asia. On October 28, Italy invaded Greece from its Albanian bases. The invasion was ill-prepared, and the Greeks proved to be tough opponents, who quickly pushed the Italians back to the Albanian borders.

The bombing of English cities by the Germans continued until the end of May 1941, but on a smaller scale. In Africa, however, limited British forces defeated the Italians in Libya, Zritrea and Zfiopia. After the defeat of the Italians in Libya, Germany sent an expeditionary corps with a small but very effective air contingent to save the ally along the axis. In East Africa, hostilities were fought between the Italians and the British using aviation, intensive air attacks began on Malta.

On April 6, Germany launched the Balkan campaign, as a result of which the British forces were evacuated from Greece, and the Germans occupied the island of Crete. On June 22, the Germans invaded the territory of the USSR as part of the Barbarossa plan, but the blitzkrieg against the Soviet Union

turned into a war of attrition for Germany. The rapid advance of the German forces at the very beginning of the war created great tension for the Luftwaffe. This tension intensified during the cold Russian winter, for which the German air force was not prepared.

On December 7, 1941, Imperial Japan began the war against the United States with an air attack on Pearl Harbor, and on December 11, Germany joined it, declaring war on the United States. Japanese armed forces using

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aircraft, captured by March 1942 a vast territory, including the Philippines, Malaya, Indochina, Burma, along with key islands in the Pacific Ocean, such as Uzi and Guam. However, in June 1942, after the Battle of Midway, the war in the Pacific took a turn in favor of the Allies. On the territory of the USSR, the Germans continued to advance towards Stalingrad and the Caucasus. In Africa, Germany was defeated in October at El Alamein, and on November 8 the American invasion of North Africa began.

The tide of the war in Europe turned against the Axis in 1943, beginning with catastrophic German casualties at the Battle of Stalingrad. The Luftwaffe still had air superiority in certain sectors of the Soviet-German front, but the opposition of the Soviet Air Force increased both numerically and tactically. The effectiveness of Soviet aviation and the decline in the strength of the Luftwaffe was demonstrated by the Battle of Kursk. Germany also suffered a defeat in the battle in the Atlantic, where allied sea and land-based aircraft controlled all areas of operation of German submarines. The Germans also suffered a defeat in North Africa, followed by a defeat in the Mediterranean with the loss of Sicily and the Allied invasion of Italian territory on September 8, 1943. Italy concluded an armistice with the Allies. The defeat of the Japanese at Guadalcanal forced them to go on the defensive in the entire Pacific theater of operations, gradually the armed forces of the Allies advanced towards the Philippines and cleared the islands of the Japanese.

In 1944, allied aviation began to operate in full in the European theater of operations. By March 1944, the Luftwaffe was thoroughly battered on the Soviet-German front, so when the Allies landed on the continent on June 6, they actually met no resistance from the German aviation CTOPOHBI. But even before the opening of the second front by the Allies, the Soviet troops had already begun the liberation of the European peoples from the German fascist occupation. Soon Romania went over to the side of the anti-Hitler coalition, and then Bulgaria and Finland declared war on Germany.

In the Pacific, US Army and Navy air power already surpassed Japanese air power on every count. The Japanese started

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lack trained pilots, so their surviving aircraft carriers sometimes went on the march as mere decoys without aircraft on board. Having suffered serious defeats in the Marshall Islands and the Philippines, the Japanese were forced to resort to the tactics of using suicide bombers. In the last days of 1944, the Germans took advantage of bad weather, which hindered allied air operations, and launched the final offensive in the West, the Battle of Bulge. However, as soon as the weather improved a little, the allied aviation showed itself again.

In Europe, the end of the war came when the Soviet troops defeated the Berlin grouping of enemy troops and stormed Berlin. Developing a further offensive, they went to Zlba, where they met with the Anglo-American troops, on May 8, 1945, Germany capitulated.

In the Pacific War, bombing by American B-29 aircraft of objects on the territory of Japan began, including the dropping of atomic bombs on Hiroshima (August 6) and Nagasaki (August 9). As a result of these bombardments, both cities were turned into ruins. 8 August

The Soviet Union, in accordance with the decisions of the Yalta and Potsdam conferences, declared war on Japan, and on August 9, Soviet troops went on the offensive in Manchuria. In the period from August 9 to September 2, Soviet troops defeated the Kwantung Army and the Kuril-Sakhalin grouping of Japanese troops, freeing Northeast China, North Korea, South Sakhalin and the Kuril Islands from the Japanese. On September 2, 1945, Japan signed the act of unconditional surrender.

The book offered to the reader is a cyclopedia of aircraft used by the air forces of Germany, Italy, Japan and their allies during World War II against the countries of the anti-Hitler coalition. These vehicles include airplanes, projectiles, helicopters, gyroplanes and gliders built in the Axis countries in serial or experimental batches and taking part in one capacity or another in combat operations or auxiliary operations. Include prototype machines in these vehicles, Ube is planning

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production was interrupted by the end of the war, captured aircraft and license-built aircraft were put into service. Brief information is given about the history of the development of the Air Force of the Axis countries in the pre-war period and during wars, about firms - developers of aviation equipment, the characteristics of aircraft and information about the combat operations in which they were used. A large amount of illustrative materials, including archival materials, will help the reader to get a better idea of the bloodiest war in the history of mankind. The book is intended for a wide audience.

1. GERMANY

In June 1919, the Treaty of Versailles was signed, according to which the total number of armed forces of Germany, which was defeated in the First World War, should not exceed 100 thousand people. The development and production of all types of aircraft in Germany were banned, but in the summer of 1922 the Germans were allowed to produce aircraft, albeit with severe restrictions. However, the Germans found BO3- ways to get around these restrictions - large aviation companies began to open their branches in other countries, for example, Flygindustri AB by G. Junkers and Svenska Aegorap AB (SAAB) by E. Heinkel in Sweden, SMAZA and AG für Dornier flugtsøyg" by K. Dornier in Italy and Switzerland, etc. d.

Aviation became the core around which the new armed forces of Germany were formed. With the advent of the Nazis to power, a program was adopted for the speedy revival of military aviation, but to calm the world community it was presented as a program for the production of training, sports and light vehicles for civilian use. Gliding clubs began to be set up all over the country, in which a large number of YOUNG people who wanted to learn the art of flying were trained. For the future air force, personnel were being trained at an accelerated pace, for example, more than 50 thousand people united within the framework of the German Aviation and Sports Association. Branches of the company "Dornier" in Italy and Switzerland began to develop heavy multi-engine aircraft, vyshustiv in the early 30's. bombers Do R, Po Wuyi

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Do 11. In November 1933, these bombers entered service as transport aircraft under the auspices of the Deutsche Reichsbahn, after which, under the pretext of the need for cargo transportation, the training of flight personnel for the future bomber force began.

In 1934, the German Ministry of Aviation was created, headed by G. Goering. On March 9, 1935, Goering announced during a conversation with an English journalist that Germany now has its own air force, the Luftwaffe. After there was no reaction from abroad, Hitler began to openly rearm the country. Commander-in-Chief of the Luftwaffe

(Oberbefehlshaber der Luftwaffe) Goering was appointed, who retained the post of Minister of Aviation. Specialists began to be brought in from abroad to help the Germans build a modern air fleet. The German top leadership willingly demonstrated the new aircraft to visiting foreign dignitaries. Air parades were an integral part of Nazi spectacles, they were often held during the congresses of the National Socialists, as well as during the opening ceremony of the 1936 Olympic Games.

In July 1936, a fascist rebellion was raised in Spain, led by General Franco. Immediately, on the orders of Hitler, German military equipment and military instructors were sent to Spain, and soon regular German troops as part of the Condor Legion (50,000 people) arrived to help the Spanish fascists. During the years of the Spanish Civil War (1936-1939), Germany, together with Italy, delivered 1,650 aircraft to the Francoists.

However, despite the obvious militarization of the German aviation industry, Western countries increased the number of contracts with German firms, which actually provided them with financial support. In 1937, the British press, for example, published data that the export of German aviation products to England had tripled over the past five years, reaching almost 3 million pounds sterling a year.

Preparing for the war, the German aviation industry increased the production of military aircraft, by the end of the first year

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During the existence of the Luftwaffe, the rate of monthly production was up to 300 vehicles per month. On the eve of World War II, Germany had: 1180 bombers in 30 groups, 771 fighters in 13 groups, 336 dive bombers in 9 groups, 408 heavy fighters in 10 groups: 40 attack aircraft in 1 group, 552 transport aircraft in 2 groups, 379 long-range reconnaissance squadrons in 23 squadrons, 342 short-range reconnaissance aircraft in 30 squadrons, 240 naval aviation aircraft in 14 coastal, 2 ship and 2 transport squadrons. |

Initially, the Luftwaffe organized two leading headquarters: the General Staff (Generalstabes der Luftwaffe) and the General Staff (Luftwaffenfuhrungsstabes). In the spring of 1942, both headquarters were merged into the main command of the Luftwaffe (Oberkommando der Luftwaffe - OKL). In the pre-war years, the territory of Germany was divided into air districts (Luftkreiskommando), and by 1939 the air fleet (Luftflotte), consisting of air corps (Fliegerkorps) and air divisions (Fliegerdivision), became the highest operational unit in the Luftwaffe. The main tactical units in the Luftwaffe were: squadron (Geschwader), group (Gruppe) and squadron (Staffel). Each squadron consisted of a headquarters and three or more groups, the number of aircraft in it ranged from 100 to 120. Each squadron was assigned its own number, indicated by Arabic numerals, for example, JG 51 - Jagdgeschwader (fighter squadron) 51.

Squadrons were designated as follows:

fighter (Jagdgeschwader) - JG

night fighters (Nachtjagdgeschwader) - NJG

heavy fighters (Zerstorgeschwader) - ZG

attack aircraft (Schlachtgeschwader) - SG (since 1943), Sch.G (until 1943)

night attack aircraft (Nachtschlachtgeschwader) - NSG

bomber (Kampfgeschwader) - KG

high-speed bombers (Schnellkampfgeschwader) - SKG

dive bombers (Sturzkampfgeschwader, Stukageschwader) - St.G

transport aviation (Transportgeschwader) - TS (since 1943), K.Gr.zbV (until 1943)

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combat training (Lehrgeschwader) - LG.

Each group, which included 40-50 aircraft, consisted of a headquarters flight and three or more squadrons. The group number was indicated by a Roman numeral, the squadron designation was written through a slash, for example: I / JG 27 - the first group of the 27th fighter squadron, P / KS 40 - the second group of the 40th bomber squadron.

In contrast to the above types, reconnaissance and naval aviation was divided directly into groups, in addition, there were special-purpose groups:

close scouts (Nahaufklarungsgruppe) - NA.Gr.

long-range scouts (Fernaufklarungsgruppe) - FA.Gr. Naval Scouts (Seeaufklarungsgruppe)

— SA.Gr. night scouts (Nachtaufklarungsgruppe) - A.Gr. Nacht carrier-based aviation

(Bordfliegergruppe) - B.Fl.Gr. coastal aviation (Kustenfliegergruppe) - Ki.El.St. test (Erprobungsgruppe) - E.Gr.

preparation of replacements (Erganzungsgruppe) - Erg.Gr.

glider - Schleppgruppe.

The first group included the first, second and third squadrons, the second group included the fourth, fifth and sixth squadrons, etc. The squadrons, which included from 12 to 16 aircraft, were designated as follows:

1./JG 27 - the first squadron of the first group of the 27th fighter squadron,

7./KG 76 - the seventh squadron of the third group of the 76th bomber squadron.

Squadrons, in turn, were divided into: pairs of aircraft (Rotte), units of 3-4 aircraft (Kette) or units of 5-7 aircraft (Schwarm).

The attack on the German radio station in Gleiwitz, which, as it later became known, was organized by the SS in Polish uniform, was used by Hitler as a pretext for aggression against Poland. At 4:34 am on September 1, 1939, three German dive bombers violated the air border of Poland. They were to bomb the cable communications leading to the mined bridge, which the Poles were preparing to destroy in the event of an invasion by German troops. Thus began World War II.

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Poland became the first country to face the Nazi method of warfare called "blitzkrieg" ("lightning war"). The basis of the blitzkrieg was the massive use of aviation and armored vehicles, during which aviation quickly established control over enemy airspace with simultaneous bombing of cities and strategically important targets - bridges, fortifications, railways, power plants and etc. To enhance the psychological impact, the German dive bombers were equipped with sirens (the so-called "Jericho trumpets"), which, when attacked, emitted a heart-rending howl that had a demoralizing effect on the enemy troops and the civilian population. Then the parachute detachments and armored troops seized the bombed territories and cleared them of the remnants of the enemy troops. |

After the winter break, the Germans began on April 6, 1940, hostilities against Denmark and Norway. Denmark surrendered on the TOT the very same day, but Norway, with the help of the Allies, fought on for almost another month. By May 10, the Germans had already captured Scandinavia, Holland fell on May 14, Belgium surrendered on May 28, and in late May - early June, more than 338,000 British, French and Belgian troops were evacuated from the port of Dunkirk. Less than a month later, on June 22, 1940, France capitulated.

In preparation for war with the Soviet Union, from the end of 1940 until the early summer of 1941, the Germans made regular reconnaissance flights over Soviet territory, which allowed them to create maps of the main strategic targets.

Despite the huge losses in aviation technology at the very beginning of the war, Soviet aviation managed to prepare and carry out the first bombing of Berlin in the shortest possible time. The Luftwaffe command believed that the powerful air defense of Berlin, which included 736 anti-aircraft guns, hundreds of fighters, barrage balloons and 160 searchlights, reliably protected the German capital from air strikes. The British could not overcome the air defense of Berlin, and the United States did not even try to bomb the German capital until January 1943. Therefore, the bombing strike

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Soviet aircraft in Berlin, scheduled for the beginning of August 1941, then had a great

political significance.

It was planned to strike from the Cahul airfield on the island of Saaremaa (O. Ezel) in the Baltic Sea. On the basis of the decision of the Stavka, 15 crews from the 1st mine-torpedo regiment of the aviation of the Baltic Fleet were trained. On the night of August 4-5, five DB-3F (IL-4) aircraft carried out a reconnaissance flight to Berlin. It was found that the anti-aircraft defense was located in a ring around the city within a radius of 100 km.

At the appointed time, on August 7 at 21.00, a group of 15 DB-3F bombers, led by the regiment commander, Colonel E.N. Preobrazhensky, rose into the air. At about one in the morning, after dropping bombs on Berlin, the planes turned north to the sea. Only then did Berlin's air defense catch on - searchlights turned on, anti-aircraft guns began to work, night fighters with headlights lit up into the air. The arrows of our bombers were beaten off from all the onboard machine guns, and only over the Baltic did the German fighters fall behind. All our vehicles returned safely to base.

The next day, German newspapers reported: "British aircraft bombarded Berlin. There are dead and wounded. Six British planes shot down. English newspapers were quick to refute this version: their planes did not appear over Berlin that day. There was no reason not to believe this, so the Germans had to admit that this successful raid was carried out by Soviet aircraft, contrary to the statements of Goebbels' propaganda about the "complete destruction of Soviet aviation." The raids on Berlin turned into a lengthy and complex operation. They ended on September 5, 1941, by which time ten flights (90 sorties) had been made, as a result of which 327 bombs weighing 250 kg were dropped and 32 fires were registered, our losses amounted to 4 bombers. In these raids, in addition to DB-ZF (IL-4) aircraft, Pe-8 bombers under the command of Hero of the Soviet Union M.V. Vodopyanov. By decrees of the Presidium of the Supreme Soviet of the USSR, ten pilots who participated in raids on Berlin were awarded the title of Hero of the Soviet Union, 13 pilots received the Order of Lenin, and 55 were awarded the Orders of the Red Star and the Red Banner of War.

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After the defeat of the German troops at Stalingrad in January 1943, the Luftwaffe no longer had overall air superiority. In the Battle of Kursk, the opposing forces concentrated their efforts on direct air support for the troops, and in this

The Soviet Air Force achieved some success using their Il-2 attack aircraft in large numbers and with great efficiency. The situation in the field of aircraft construction also changed in favor of the Soviet Union. The advantage of Soviet aviation grew with each subsequent year. By the time the Red Army began its final offensive against Berlin, it had at least 7,500 fighters, many of which were as good as the best German models. During the period from June 22, 1941 to May 9, 1945, the Luftwaffe lost about 60,000 combat aircraft on the Soviet-German front, which accounted for 78% of German aviation losses during the entire Second World War.

The implementation of the Luftwaffe aircraft programs during the war was entrusted to the main German aviation companies: Arado, Bachem, Blom and Docc, Dornier, Fieseler, Focke-Wulf, Gotha, Heinkel, "Henschel", "Junkers", "Messerschmitt", "Sombold", "Zeppelin", etc.

"Arado"

In 1921, the industrialist G. Stinnes acquired the company Werft Warnemünde des Flugzeugbau Friedrichshafen, which built small boats and yachts. In 1925, the firm was renamed Arado Handelsgesellschaft, in the same year it built its first SI biplane trainer, followed by the SC and S types. After Hitler came to power, the company received large financial assistance from the government, in March 1933 it was renamed Arado Flugzeugwerke GmbH.

Ag 66

The first flight of the Arado biplane training aircraft took place in 1932, the second prototype, designated Ar 666, was tested as a seaplane. At the end

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In 1933, the Ar 66c version, equipped with the Az 10C engine, went into series production. The aircraft was used as a training ground for training pilots and attack aircraft bombardiers. |

About 2,000 Ar 66c vehicles, starting from 1942, operated on the Soviet-German front as night attack aircraft as part of the NSGr. 2, NSGr. 3, NSGr. 5, NSGr. 8 and NSGr. 12. In winter, many machines were equipped with a ski chassis.

Characteristics of Ar 66c: crew — 2 people, power plant — | engine As 10C with a power of 240 hp. With. (179 kW), wingspan - 10.0 m, aircraft length - 8.3 m, height - 2.93 m, empty weight - 905 kg, maximum takeoff weight - 1330 kg, maximum speed - 210 km / h, range - 716 km, weapons - anti-personnel traps and bombs weighing 2 kg 4 kg.

Ag 68

In early 1933, the Arado firm began work on the Ar 68 single-seat biplane fighter. The first prototype of the Ar 68a with a BMW UM engine entered flight tests in the summer of the following year. By the summer of 1935, two more experimental aircraft Ag 685 and Ar 68c, equipped with a more powerful Lito 210 engine, began to fly, after some time two more aircraft, Ag 68d and Ag 68e, were added to them. After testing prototypes, it was decided to put the aircraft into series under the designation Ag 68E-1; the engine was BMW VI 7.37.

The first aircraft entered service in the late summer of 1936 with I/JG 134 (later ZG 26) and then with I/JG 121. Testing of the fighters in combat conditions in Spain showed that they did not outperform the Soviet I-15 fighters. . The consequence of this fact was the release of a new version of the aircraft Ar 68E-1 with a more powerful engine Lito 210Ea, in 1937 this aircraft was re-equipped with most of the fighter aircraft. In 1938, two Ar 68E vehicles fought in

Spain as night fighters. After the outbreak of World War II, Ar 68E-1s were used in squadrons of night fighters 10./JG 72 and 11./JG 72, on duty on the German-France

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tsuzskaya border. In the winter of 1939/40, as part of the 10./JG 53 squadron, the Ag 68E-1 version was used as a night fighter. Subsequently, all remaining Ar 68 fighters were transferred to flight schools.

Characteristics Ag 68E-1: crew - 1 person, power plant - 1 engine Jumo 210Ea with a capacity of 680 liters. With. (507 kW), wingspan - 11.0 m and their area - 26.5 m², aircraft length - 9.5 m, height - 3.3 m, empty weight - 1600 kg, take-off weight - 2020 kg, maximum speed - 332 km/h at an altitude of 2650 m, range - 500 km, climb time to a height of 3000 m - 10.2 min, service ceiling - 8100 m, armament - two 7.92-mm machine guns MG 17 and six 10-kg bombs..

Ag 79

In 1935, Arado produced a training and sports monoplane aircraft under the designation Ag 79, equipped with a BMW 504A-2 engine. In 1938, the Ar 79 set several international speed and range records for aircraft of this class. During the war, Ag 79 was used for pilot training, as well as

liaison and auxiliary aircraft.

Characteristics of Ag 79: crew — 2 people, power plant — 1 engine BMW 504A-2 with a capacity of 105 liters. With. (78 kW), wing span - 10.0 m and its area - 14.0 m², aircraft length - 7.6 m, height - 2.1 m, empty weight - 526 kg, takeoff weight - 800 kg, maximum speed - 230 km/h near the ground, cruising speed - 205 km/h, range - 1025 km, climb time to a height of 1000 m - 3.8 min, practical ceiling - 4500 m, armament - two 7.92 mm MG 17 machine gun and six 10 kg bombs.

Ag 95

In the spring of 1935, the Arado received an order for the development of a carrier-based reconnaissance torpedo bomber in two versions - with a float and wheeled chassis. Five experimental Ag 95 machines were built, the first flight took place in the fall of 1936. The third and fifth machines (Ar 95U3 and Ar 95V5), equipped with floats, were considered as prototypes in series.

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th Ar 95A aircraft, and the fourth Ar 95V4 with a wheeled chassis served as a prototype for the serial Ag 95V. Testing revealed insufficiently good flight characteristics of experimental machines. After the appropriate refinement, a pre-production batch of the Ag 95A-0 biplanes with a BMW 132D engine with an 880 horsepower was put into production. s., although by that time it had already become clear that the construction of the first German aircraft carrier was being delayed for a long time.

In 1938, six Ag 95A-0 vehicles as part of the Condor legion were sent to Spain, where they were used for reconnaissance at sea. A year later, six aircraft Ag 95A-1 were built for Chile (three float and three wheeled). In 1939-1940, aircraft Ag 95A-1 equipped the squadron 3./SA.Gr. 125. After the invasion of German troops into the Soviet Union, the group SA.Gr. 125 operated in the Baltics, and was later transferred to Romania. The SA.Gr group continued to operate in the area of the Gulf of Finland. 127, also equipped with Ag aircraft

95A-1.

Characteristics of the Ag 95A-1: crew - 2 people, power plant - 1 BMW 132Dc engine with a capacity of 880 hp. With. (656 kW), wingspan - 12.5 m and their area - 44.0 m², aircraft length - 11.1 m, height - 5.2 m, empty weight - 2537 kg, take-off weight - 3560 kg, maximum speed

- 300 km / h at an altitude of 3000 m, range - 1090 km, climb time to a height of 3000 m - 2.3 minutes, armament - 1 machine gun MG 17, | MO 15 machine gun, one 700 kg torpedo or one 375 kg bomb.

Ag 96

The first flight of the Ar 96 "Wiking" monoplane multi-purpose and training aircraft, equipped with an Argus As 10C engine with a capacity of 240 hp. c., took place in 1938. The following year, a batch of serial aircraft Ag 96A was manufactured, and in 1940 the Ag variant went into series.

96B with a more powerful As 410A-1 engine.

Soon, the production of the aircraft was transferred to the Junkers branch in Oschersleben-Bode, and in 1941 to the Czechoslovak firm Ama. The Luftwaffe used Ag 96 aircraft in aviation schools to improve the skills of pilots, to practice night flights and

flights on

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instruments, as well as for practicing combat operations as part of a group of aircraft. The total number of built aircraft Ag 96 amounted to 11,546 copies; these aircraft were produced at the Avia company until 1948 under the designation C.2B.

Characteristics Ag 96V: crew - 2 people, power plant - | engine As 410A-1 with a capacity of 465 liters. With. (347 kW), wing span - 11.0 m and its area - 17.1 m², aircraft length - 9.13 m, height - 2.6 m, empty weight - 1295 kg, takeoff weight - 1695 kg, maximum speed - 330 km / h, range - 990 km, armament - 1 machine gun MS 17.

Ag 196

The Ag 196 two-seater seaplane, equipped with a single BMW 132K engine, was originally developed to replace the He 60 biplane. Deutschland" and "Admiral Graf Spee". Before the start of the war, 18 aircraft were delivered to the cruisers Scharnhorst, Gneisenau, Admiral Scheer, Admiral Nirreg, based in Kune, and the cruisers Emden, Köln, Königsberg, Leipzig" and "Nürnberg", based in Wilhelmshaven.

In 1940, Ar 196A entered service with the Luftwaffe coastal units based in Northern Europe, in particular, one seaplane from the Ki. E1. From. 706 ara- forged and damaged the English submarine "ova". Several Ar 196s were shot down by British aircraft during the Battle of England, but most of the losses were caused by storms during anchorages. In 1941-1942 seaplanes based at French bases were used to intercept British anti-submarine aircraft in the Bay of Biscay, during which the Germans scored more than ten victories. A total of 593 aircraft were built.

Characteristics of the Ag 196A-3: crew - 2 people, power plant - | BMW 132K engine with 970 hp With. (723 kW), wingspan - 12.4 m and its area - 28.3 m², aircraft length - 11.0 m, height - 4.45 m, empty weight - 2335 kg, take-off weight - 3303 kg, maximum speed —

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310 km/h at an altitude of 4000 m, range - 1070 km, climb time to a height of 3000 m - 8.7 min, practical ceiling - 7200 m, armament - two 20 mm MO-EE cannons, 1 machine gun MG 17, 1 MO 15 machine gun and two 50 kg bombs.

Ag 199

The Ar 199 twin-float catapult-launched aircraft was developed as a training aircraft for the training of naval aviation crews, as well as for the retraining of pilots from

single-engine to multi-engine aircraft. During the development, the design of the Ar 79 aircraft was taken as a basis. The crew was placed in the cockpit as follows: a student pilot and an instructor sat next to each other in front, behind them there was a place for a radio operator (observer) with the appropriate instrumentation. The first prototype of the Ar 199 took off in 1939, then two more prototypes joined the summer tests. As a power plant, the machines used the As 410C or HM 512 engine as a power plant. A small number of Ar 199A versions were built, after which production was stopped, because the RLM considered that the Luftwaffe had a sufficient number of obsolete machines for training pilots.

Characteristics Ar 199A: crew - 3 people, power plant - | Az 410C engine, 450 hp. With. (335 kW), wing span - 12.7 m and its area - 30.4 m², aircraft length - 10.57 m, height - 4.36 m, empty weight - 1676 kg, takeoff weight - 2060 kg, maximum speed - 260 km / h at an altitude of 3000 m, range - 740 km, practical ceiling - 6500 m.

Ag 232

The development of the medium-range transport aircraft Ag 232 "Tausendfüßler" ("Centipede") with two BMW 801 engines began in 1941, in the summer of 1941 the first prototype took off. The aircraft was intended for operation from unprepared unpaved grounds. Its design provided for an additional chassis of 11 pairs of small wheels along the bottom of the fuselage, on which

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it could steer at low speed, overcoming ditches up to 1.5 m wide. The main landing gear consisted of a semi-retractable nose strut and main struts retracted into the wing. A feature of the design of the main racks was the ability to tighten during loading and unloading. In this case, the aircraft was lowered onto the wheels of the additional undercarriage, and the rear cargo hatch was at the level of the truck body. After the completion of the work, the main racks raised the aircraft so that during takeoff the additional landing gear did not touch the runway. In the future, due to the lack of BMW 801 engines, starting from the fourth experimental machine (prototype of series B aircraft), four VMU 323 engines were installed.

The first two experimental vehicles took part in the supply of the Paulus group, surrounded near Stalingrad. The eighth and eleventh vehicles were used as weather scouts in Norway. At the end of the war, one of the experimental machines and four pre-production aircraft AG 232B-0 operated in the interests of the Luftwaffe High Command on the Soviet-German front, flying from bases in Finland and Norway into the depths of the Soviet troops. |

One of the Ag 232B-0s was used in Operation Zeppelin. The purpose of Operation Zeppelin was to organize an assassination attempt on the head of the Soviet state I.V. Stalin. Otto Kraus was appointed head of the special reconnaissance and sabotage team "Zeppelin", the headquarters of the team was located in Pskov. The role of the main executor of the operation was selected by the Soviet prisoner of war Pyotr Shilo, who was personally instructed during training by General Vlasov and O. Skorzeny. To carry out the act of sabotage, Shilo was supplied with a set of special weapons, among which was, in particular, the Panzerknake mini-grenade launcher. The Panzerknake, attached to the arm and hidden under the sleeve of the outer clothing, fired miniature armor-piercing incendiary projectiles capable of penetrating armor 45 mm thick.

At two o'clock in the morning on September 5, 1944, an Ag 232V-0 aircraft flying in the direction of Moscow spotted the air defense systems of the Moscow region in the Kubinka region. Airplane coming under fire

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anti-aircraft guns and having received damage, lay down the reverse course and made an emergency landing near the village of Yakovlevo, Smolensk region. The crew of the aircraft unloaded a motorcycle with a sidecar and

sent Shilo and his partner, who took with them weapons, money - 428,000 rubles, a large number of forms of documents and seals, towards Moscow to complete the task. After that, having abandoned the badly damaged car, the crew left in two groups through the scaffolding towards the front. At six o'clock in the morning, Shilo and his partner were detained by the NKVD in the village of Karmanovo, Smolensk region.

At the end of the war, one of the surviving Ag 232 was captured by British troops and soon transferred to England, where OH was being tested.

Characteristics of Ar 2328: crew - 4 people, power plant - 4 BMW Vgato 323 engines with a capacity of 1200 hp each. With. (895 kW), wingspan - 33.5 m and ero area - 138 m², aircraft length - 23.6 m, height - 5.7 m, empty weight - 12,790 kg, take-off Bec - 20,000 kg, maximum CKO- height - 305 km/h At an altitude of 4000 m, range - 1300 km, climb time to a height of 6000 m - 25.5 min, practical ceiling - 6900 m, armament - three 13-mm machine guns MG 131 and one 20mm MO 151 cannon.

Ag 234

The Ar 234A twin-engine reconnaissance aircraft project was completed at the end of 1941 (the original project designation was Ar E370). The terms of reference of the RLM did not provide for a group launch of these aircraft, therefore, in order to increase fuel reserves and reduce the weight of the machine, the company's designers refused to use a normal landing gear. Instead, a retractable lie was installed under the fuselage, and small supports were provided under the engine nacelles to ensure stability during landing. For take-off, the aircraft was mounted on a drop-down launch cart, landing was carried out on a ventral ski.

The aircraft first took to the air on June 15, 1943, later the aircraft was lost. Second instance of Ar 234V2

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took off on 27 July, HO crashed on further testing. The third Ar 234V3 aircraft was used for takeoff practice with HWK 501 launch boosters, its cockpit was equipped with an ejection seat for the pilot, and the aircraft was severely damaged during testing. The fourth and fifth aircraft were in reserve. On the first four copies, the Lito 004A turbojet engine with a thrust of 840 kgf was installed, the fifth machine had Leto 004V-0 engines with the same thrust, but weighing 100 kg less.

On the sixth and eighth machines, 4 BMW 003A engines with a thrust of 800 kgf each were installed; these machines were tested as prototypes of Ag 234C machines. On the sixth machine, the engines were placed in separate nacelles, on the eighth - in twin nacelles. The first flight of the sixth machine took place on April 8, 1944, and later it underwent military trials at the front. The seventh car, which first took off on July 10, 1944, was lost during testing.

Defensive armament was not provided for on Ag 234A aircraft, since it was believed that the aircraft, having a large margin of speed, would easily break away from enemy fighters. In the rear part of the fuselage of the aircraft there were compartments for photographic equipment and a braking parachute. However, in connection with the decision to build machines of the B series, further work on the A series was stopped.

The design of the B-series aircraft began in December 1942, i.e., even before the start of flight tests of the A-series aircraft. group. Therefore, instead of the starting cart and ski, the designers provided a normal three-wheeled chassis, which was used in all subsequent series, two Jumo 004B-2 engines were used as a power plant.

At the end of 1944, the Ag 234V-1 reconnaissance aircraft entered service with the experimental aircraft unit of the Luftwaffe High Command (Versuchverband Ob.dL). Then they completed the reconnaissance "Sonderkommandos" "Hecht" and "Sperling", on the basis of which in 1945 squadrons 1 (F) 33, 1 (F) 100 and 1 (F) 123 were formed, performing reconnaissance flights over England. It was also developed

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a demanding version of this machine, in which two fixed guns MO 151 were installed under the fuselage in special fairings.

The Ar 234B-2 bomber became the first production aircraft with a fixed weapon for firing backwards. This was due to the appearance of high-speed, but low-maneuverable jet fighters among the allies in the last years of the war, in which the line of pursuit in air combat was approaching a straight line, so the bomber attack from the tail was most likely for a fighter. Aiming during defensive firing of the bomber was carried out through a RU-1V periscope sight installed in the upper part of the pilot's cabin. To facilitate the takeoff of a heavily loaded machine under the wing, from the outer sides of the engines, launch accelerators with a thrust of 500 kgf each could be suspended, which almost halved the takeoff run.

The Ar 234B-2 aircraft in January 1945 completed the KG 76 bomber squadron. In total, 210 aircraft of the B series were built before the end of the war, in addition, it was supposed to use the Ag 234V as a tug of the Fi 103 cruise missile, which was equipped with a drop two-wheel landing gear and a tug mount, such tests were carried out in Rechlin.

In addition, Arado developed the following versions of the C-series aircraft, which were equipped with four BMW 003A turbojet engines, doubled under each wing console: |

Ag 234C-1 - single-seat reconnaissance aircraft, armament - 4 non-mobile cannons MS 151 (two in the forward fuselage for forward firing and two in the rear fuselage, aimed backwards);

Ag 234S-2 - single-seat bomber, similar to the previous version;

Ag 234S-3 is a single-seat bomber and night fighter with four MC 151 cannons (in the fighter variant, two cannons were located in the forward fuselage, and two were in fairings under the fuselage, barrels forward), but

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the owl part of the fuselage was to be equipped with a FuG 218 Neptun radar;

Ar 234C-4 - single-seat reconnaissance aircraft with BMW 003C engines, armed with 4 MO 151 cannons (two in the forward fuselage, two in fairings under the fuselage for firing backwards - barrels to the tail);

Ag 234S-5 - two-seat bomber with VMU 003S engines;

Ag 234S-6 - single-seat reconnaissance aircraft based on the previous version;

Ag 234C-7 is a two-seat night fighter equipped with 4 Nez 011A engines with a thrust of 1350 kgf each and a FuG 245 "Bremen" radar in the forward fuselage, armament - two 30 mm MK 108 cannons and two MG 151 cannons; ©

Ar 234C-8 is a single-seat bomber with two Leto 0040 engines with a thrust of 1050 kgf each.

In total, until the end of the war, 10 experimental and 14 production vehicles were built from this series, which were used as night fighters in the "Commando Bonov". Ar 234C was also tested as a carrier of the Hs 294 rocket, in addition, a technique was developed for launching the Fi 103 cruise missile from the back of the Ar 234C, for which a special rocking chair was used, which raised the E1 103 at the time of launch above the carrier aircraft.

Projects of aircraft of the O, E, E and R series were also developed, which were not implemented until the end of the war. The firm's designers have developed a new crescent-shaped circle with variable sweep (from 37° y of the wing root to 25° y of its tips). To test this wing, an Ar 234M16 with two BMW 003R engines was intended (a combination of a conventional BMW 003A turbojet engine with a BMW 718 rocket engine capable of developing thrust up to 1225 kgf within 3 minutes). The wing was already ready to be installed on the aircraft, but in April 1945 the British troops occupied the plant, and the Germans destroyed the wing before retreating. |

On February 24, 1945, an Ar 234B-2 made a forced landing in a village near Segelsdorf due to the shutdown of one engine. The next day the village was overrun by American troops and the aircraft was the first to fall into Allied hands.

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After the end of the war, two captured vehicles (Ar 234B and Ar 234C) were taken to the Soviet Union for study. Characteristics of the Ar 234B "Blitz" ("Lightning"): crew - 1 person, power plant - 2 Jumo 004B-2 turbojet engines with a thrust of 900 kgf, wingspan - 14.41 m, area - 26.4 m², aircraft length - 12.64 m, height - 4.3 m, empty weight - 5228 kg, takeoff weight - 8850 kg, maximum takeoff weight - 9500 kg, maximum speed - 742 km / h at an altitude of 6000 m, landing speed - 146 km / h, maximum range with hanging tanks with a capacity of 4360 l - 1890 km, time to climb 8000 m - 18 min, service ceiling - 9200 m, armament - 2 guns MO 151 and up to 1500 kg of bombs.

Ag 240

In April 1939, the company received an order for the development of the Ar 240 multi-purpose aircraft. It was a two-seat machine with a pressurized cabin and a remote-controlled machine gun mount, air brakes were located in the rear fuselage, folding into a cone. The first experimental aircraft Ag 240M1, which took off on May 10, 1940, was equipped with two DB 601A engines, which were later replaced by DB 603E engines. Tests revealed the instability of the machine along all three axes, after which changes were made to the design of the third experimental machine.

The aircraft entered military trials in the long-range reconnaissance group. Colonel Knemeyer of the RLM flew it on several reconnaissance flights over England. According to the test results, the fourth experimental car was slightly modified, except for Toro, it was equipped with more powerful engines.

The A-series aircraft were developed as fighters. Later, in the battles against the USSR and England, they were used as scouts, for which two cameras were installed in the engine nacelles. The third and fourth prototypes (Ar 240V3 and Ar 240V4) became the prototypes for the serial Ar 240B, a two-seat fighter equipped with two DB 601 engines. , which were developed in variants of istre

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fighter, reconnaissance, night fighter and high-speed bomber. In addition, machines of the D series (multi-purpose with DB 614 engines), E (bomber with DB 6030 engines) and E (fighter) series were developed.

In December 1942, by order of E. Milch, the program was suspended; in total, 12 machines of the A-0 series were built before the termination of the program. Cars Ar 240A-01 and Ar 240A-02 in winter

1942/43 operated as part of the third squadron of the long-range reconnaissance group of the Luftwaffe High Command (3./FA.Gr.Ob.dL) in the Kharkov region, the second vehicle was damaged on January 24, 1943, and the first vehicle crashed February 16th. In July 1943, the A-03 aircraft was assigned to the second squadron of the long-range reconnaissance group 2/FA.Gr. 122, based in Italy, in September it was severely damaged, after which it was replaced by an A-04 aircraft, which soon crashed and was returned to the company.

One of the Ar 240A since February 1943 operated as part of the air command "Ost" (Lw.Kdo.Ost), and from July of the same year - as part of the Don Air Command (Lw.Kdo.Don). The rest of the aircraft were used on the southern sector of the Soviet-German front as part of the FA.Gr.Ob.dL group. In February over England and in March over Corsica, in the autumn of the same year it crashed while performing a reconnaissance flight over Poland.

Characteristics of the Ag 240A-0: crew - 2 people, power plant - 2 engines OV 603A-1 with a capacity of 1750 liters each. With. (1305 kW), wing span - 14.34 m and its area - 26.0 m², aircraft length - 12.81 m, height - 3.96 m, empty weight - 6350 kg, takeoff weight - 10,500 kg, maximum speed - 668 km/h at an altitude of 6000 m, cruising speed - 598 km/h at an altitude of 6000 m, range - 2200 km, time to climb 6000 m - 9.7 min, service ceiling - 10,200 m, armament — 4 MC 151 cannons (two each in the forward fuselage and in the wing root) and two EDL 1317, 2 cameras in engine nacelles, one 1000-kg or 1800-kg bomb under the fuselage or two 500-kg bombs under wing.

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Ar 396

In 1944, the company developed a modernized version of the Ar 96, which received the designation Ar 396. The structure of the aircraft was made of wood, with the exception of the metal section of the fuselage, which housed a two-seat cabin. The As 411 engine was used as a power plant. The single-seat version of the Ar 396A-1 aircraft was equipped with one MG 17 machine gun, equipped with hardpoints for two 50-kg bombs and was intended for training fighter pilots. The two-seat version of the Ag 396A-2 had no armament and was intended for the initial training of pilots.

Three prototypes of the machine and 25 machines of the Ar 396A-0 installation series were ordered from the French company SIPA, but with the retreat of German troops from France, the production of aircraft was transferred to Letov (protectorate of the Czech Republic and Moravia). The first experimental machine took off on November 24, 1944, and in total, 21 copies of the Ar 396 were built before the end of the war. After the war, the French company 51PA built 234 copies of various variants of the At 396 aircraft under the SIPA 5.

Characteristics Ar 396A-0: crew - 2 people, power plant - | As 411 engine with 590 hp. With. (440 kW), wingspan - 11.0 m, aircraft length - 9.29 m, height - 2.45 M, empty weight - 1643 kg, takeoff weight - 2060 kg, maximum speed - 354 km/h, range — 600 km, time to climb to a height of 4000 m — 10.3 min, practical ceiling — 7000 m.

"Bachem"

Wa 349

At the end of the wars, the Air Ministry adopted a program to develop small rocket fighters whose sole purpose was to intercept enemy bombers in the vicinity of a protected site. The probability of massive losses of object interceptors when repelling allied air raids was assessed as very high, therefore, in the late spring of 1944, the RLM

thirty

Tilo technical requirements, which provided for the maximum simplification of the design and the use of the cheapest materials in the construction of interceptors. After discussion of numerous proposals, the Heinkel project He P.1077 became the winner of the competition. However, E. Bachem, the former technical director of the Fieseler company, who submitted his initiative project of the BP.20 one-time missile interceptor for the competition, managed to enlist the support of G. Himmler. A day after the announcement of the winner of the Heinkel project, E. Bachem's proposal under the designation Ba 349 "Natter" ("Viper") was given the highest priority.

In July 1944, the company "Bachem Werke GmbH" ("Bachem Werke GmbH") was urgently created, which was taken over by the technical director of the company "Dornier" H. Bethbeder. The new company took over a small factory in Waldsee near the Black Forest. Already in August, work began on the Ba 349 under the personal supervision of Colonel Knemeyer from the technical department of the RLM. By the end of 1944, Bachem had about 60 experienced specialists, including one rocket engine specialist from Walter, as well as 250 unskilled workers, most of whom worked in small woodworking workshops dispersed in around the Black Forest.

The interceptor was supposed to take off from a ground launcher, attack the enemy with unguided missiles, and after using all the missiles, make a ram. The interceptor pilot was instructed to eject immediately before the collision, at the same time, with the help of explosive bolts, the tail section of the fuselage was disconnected from the rocket engine and landed by parachute. The surviving propulsion system was supposed to be reused.

The design of the Ba 349 was mainly made of wood, the straight wing did not have any mechanization, and the aircraft was controlled using control surfaces located on the cruciform tail unit. The cockpit was located in the forward part of the fuselage, and under the discarded plastic nose

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fairing - honeycomb battery of unguided rockets (24 Hs 217 rockets of 73 mm caliber or 34 R4M rockets of 55 mm caliber). To protect the pilot in flight, it was envisaged to book the cockpit - the installation of a front armor plate behind the rocket battery, and a rear armored partition behind the seat.

The cockpit contained: control panel, pilot's seat, rudder pedals, fire control pedal, aircraft control stick, Patin autopilot, oxygen equipment and radio control equipment. Aiming during the attack was carried out with the help of a frame located in front of the cockpit between the fairing and the windshield. The windshield had a thickness of 60 mm; In the middle part of the fuselage there were a wing and two fuel tanks - the lower one for C-Stoff (a mixture of 3090th hydrazine hydrate with methanol) for 190 liters, the upper one for T Stoff (8090th hydrogen peroxide with the addition of a stabilizer) for 440 liters, in the tail The parts included empennage, LRE NUK 509A-1 with a thrust of 1500 kgf, attachment points for four Schmidding-533 launch boosters, and a container with a parachute. |

The takeoff of the aircraft from the launcher was carried out with the simultaneous operation of the launch boosters and the LRE, set to the idle mode. The LRE thrust limit was made to limit the starting overload to a value of no more than 2.5 v. It was believed that even with such a value of overload, the pilot could not cope with the control, so the rudders were blocked before launch in a predetermined position, which ensured the safe departure of the aircraft from the rails of the launcher. At an altitude of 170-200 m, the boosters were dropped, the rocket engine was brought to full thrust, and the autopilot was switched on, controlled by radio from the ground. After reducing the overload at alti

about 1200 m the pilot had to switch to manual control. After completing the combat mission, the pilot had to leave the aircraft.

During the development of the aircraft, it turned out that the cockpit was too small to accommodate the ejection seat, and the design of the seat itself had not yet been worked out. For this reason, the concept of leaving the aircraft was changed by the pilot: now he had to unfasten the seat belts, disconnect

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thread the aircraft control stick, tilt the canopy and drop the nose of the fuselage. The bow was separated along with the windshield, front bulkhead and control panel. The brake chute that opened in the tail section, as it were, shook the pilot out of his seat forward, after which the pyrotechnic bolts fired the tail section from the middle part of the fuselage. After separation, the pilot and the tail section, together with the propulsion system, each landed on their own parachute.

The first prototype Ba 349 was intended for towing flight tests and had a tricycle wheel chassis. It first took to the air without a pilot in November 1944 in tow behind a He 111 aircraft. The tests ended in failure - the aircraft did not leave the guides of the launcher due to the fact that the launch boosters burned out in the places of the ignition wiring. The first successful unmanned launch took place on December 22, after which another 10 unmanned vehicles successfully launched. According to the test results, a number of changes were made to the design of the Ba 349U16, which became the prototype of the A-series machines. On February 25, 1945, the first full launch of the Ba 349A took place with a rocket engine and a dummy in the cockpit. The flight was successful, after which the RLM demanded to speed up the tests and move on to manned flights. On February 28, test pilot Lieutenant Lothar Siebert took off for the first time in a Ba 349A. The aircraft had a good start, but during the climb, the cockpit canopy spontaneously opened, concussing the pilot. The car, gaining a height of about 1500 m, dived and exploded when it hit the ground, the pilot died.

Despite the catastrophe that occurred during the first manned flight, the tests continued, having performed 34 launches until April 1945, including 7 manned ones. After testing on the aircraft, the tail section of the fuselage was redesigned for the new NUK 509S twin-chamber liquid-propellant rocket engine; RLM limited production of Ba 349A 50

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experimental machines, immediately launching the Ba 349B into mass production (the first batch of machines was to have the designation Ba 349B-1).

A total of 36 aircraft were built before the end of the war, among them three experimental Ba 349Bs, one of which flew. None of the built Ba 349 aircraft had time to take part in the hostilities, although 10 aircraft were placed at Kirkheim at starting positions to repel allied air raids. Almost all of them, together with their launchers, were destroyed during the retreat by special SSZ teams, but four vehicles were captured by allied forces - three American and one Soviet.

Characteristics of Ba 349B: crew - 1 man, power plant — 1 LRE NUK 509 with a thrust of 1700 kgf, wingspan — 4.0 m and its area — 4.7 m², aircraft length — 6.0 m, height — 2.25 m, takeoff weight - 2234 kg, weight empty - 880 kg, maximum speed - 990 km/h, rate of climb - 190 m/s, LRE operating time - 4.36 min.

"Blom and Foss"

"Hamburger Flugzeugbau GmbH" ("Hamburger Flugzeugbau GmbH") was established in July 1933 as a branch of the shipbuilding company "Blom und Voss Schiffswerft" from Hamburg. Richard Vogt, who previously worked for the Japanese company Kawasaki, became the chief designer of the company. In the middle of 1934, the first training biplane aircraft was built, then the production of licensed aircraft and components for them began. In 1937, the Wu 138 seaplane took off for the first time, nicknamed the "flying shoe", it was widely used during the war. Then the Ha 139 flying boats were built for the Luft Hansa airlines and the asymmetric Wu 141 observer aircraft for the Luftwaffe. By then the company had changed its name to Abteilung Flugzeugbau der Schiffswerft Blom und Voss.

("Abteilung Flugzeugbau der Schiffswerft Blohm und Voss"). B 1940 The largest flying boat of the time, the Wu 222, built at the company's new plant in Hamburg Finkenwerder, made its first flight.

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Wu 138

In 1934, Blom and Voss began developing a long-range reconnaissance aircraft under the designation Na 138. A prototype of the flying boat Na 138V1 made its first flight on July 15, 1937. beams and three Jumo 205C engines. Unsatisfactory flight performance during takeoff from the water caused a significant alteration in the design of the machine, after which it went into pre-series production under the designation Vu 138A-0. The first 25 boats of the Vu 138A-1 series began to arrive from April 1940 in KG.zbV 108 "See", 1./Ku.Fl.Gr 506 and 2./Ku.Fl.Gr 906, taking part in the invasion to Norway and France

end of the same year.

In December 1940, 14 boats of the Vu 138B-1 series left the assembly line, and another seven boats - in 1941. The boats of this series were equipped with Leto 2050 engines, and two additional turrets with MO 151 each were installed. Boats Wu 138B were actively used in 1941 from bases in Norway against Allied convoys. In March 1941, boats of an improved version of the Vu 138S-1 began to enter service, the number of which by the time production ceased in mid-1943 amounted to 227 units. Vu 138S-1 was used in the Arctic, in the Baltic and Black Seas.

The Wu 138C boats were most successfully used in Key. H1.Og 406 in the north of Norway, on account of this group aTa-ki many allied convoys, in particular the RO-16 convoy in April 1942. Some aircraft were equipped with EiS 200 radars to search for ships, in the role of a transport aircraft Vu 138 was capable of carrying 10 people. Versions of flying boats equipped for take-off with two launch boosters with a thrust of 500 kgf each had the designation Vu 138B-US, a number of boats under the designation Vu 138MS were used in the air mining group (Minensuchsgruppe).

Characteristics of the Vu 138S-1: crew - 5 people, power plant - 3 Leto 2050 engines with a capacity of 880 HP each. (656 kW), wing span - 26.94 m and its area - 108.5 m², aircraft length - 19.85 m, height - 5.9 m, empty weight - 11,780 kg, maximum takeoff weight - 17,670 kg, maxi

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low speed - 285 km / h at an altitude of 3000 m, maximum flight range - 4300 km, practical ceiling - 5000 m, armament - 2 guns MG 151, | machine gun MG 131, | machine gun MG 15 and four 150-kg depth charges.

On 139

In the autumn of 1935, under the leadership of R. Vogt, the development of a seaplane began under the designation Ha 139, which was ordered by Lufthansa. At the same time, a military version of the seaplane was also being developed. The prototype Na 139U! 1 first took to the air in the fall of 1936, in March

The following year, it was handed over to Lufthansa for operation under the designation Ha 139A Mogateeg. After the company received all three ordered cars from August to November 1937, they made several flights between the Azores and New York.

After the outbreak of hostilities, it was decided to convert the Na 139A into long-range maritime reconnaissance aircraft. The third machine was returned to the company for modernization: the forward fuselage was lengthened and equipped with a place for an observer, four MG 15 machine guns were installed, as well as radio and navigation equipment. The modernized aircraft, which received the designation Na 139B, made its first flight on January 19, 1940 in the Baltic, taking off from the ship's catapult. After military trials, he entered service in J./Ku.Fl.Gr 406, during the fighting in Norway was used as a weather reconnaissance. In 1942 it was modified into a minelayer under the designation Na 139B/MS. Two other machines Na 139A were also converted into Na 139B; they, as part of KG.zbv 108 "See", carried out supply tasks for the units of the German army in Norway.

Characteristics of Na (Vu) 139B: crew - 4 people, power plant - 4 Leto 205 C engines with a capacity of 600 hp each. With. (447 kW), wingspan - 29.5 m and wing area - 125.9 m², aircraft length - 20.1 m, height - 4.8 m, take-off weight - 19,000 kg, maximum speed - 286 km / h at an altitude of 3000 m, maximum flight range - 4920 km, service ceiling - 5000 m, armament - 4 machine guns MG 15.

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Wu 141

At the beginning of 1937, the Ministry of Aviation issued a task to develop a short-range reconnaissance aircraft capable of performing the tasks of a light attack aircraft, a bomber, and a smoke screen director. Brom and Döck proposed an initiative project of an asymmetric aircraft, in which the crew was placed in a glazed gondola on the right. It was believed that the asymmetric scheme would allow to get rid of the rotating moment of the propeller and improve the visibility of the crew. The first flight of a prototype aircraft, designated Na 141, took place on February 25, 1938.

According to the test results, the company received a contract for the construction of three prototypes and five pre-production samples under the designation Vu 141A-01. In the process of flight tests in January 1940, insufficient T/O weight ratio of the aircraft was revealed, so in February the company presented a version of the aircraft under the designation Vu 141B, equipped with a more powerful engine BMW 801. The new version was accepted by the Ministry, and the company received an order for five Vu 141B-0 pre-series cars and ten Vu 141B-1 production cars.

In autumn 1941 one of the pre-production vehicles was delivered to the training and reconnaissance unit in Grossenhain (Saxony) for military trials. Soon, the formation of the first combat squadron with Vu 141B aircraft for operations on the Soviet-German front began. However, in the spring of 1942, the production of the Vu 141B was stopped, the vacated production facilities were transferred to the construction of Fw 200 aircraft, and the Vu 141B that entered service was gradually replaced by the He 189 aircraft.

Characteristics of Vu 141B-1: crew - 3 people, power plant - 1 BMW 801A-0 engine with a capacity of 1560 liters. With. (1163 kW), wingspan - 17.42 m and wing area - 51.0 m², aircraft length - 13.95 m, height - 3.6 m, empty weight - 4700 kg, take-off weight - 5700 kg, maximum speed - 435 km/h at an altitude of 2000 m, maximum flight range - 1888 km, service ceiling - 10,000 m, armament - 2 machine guns MG 17, 2 machine guns MG 15 and four 50-kg bombs.

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Wu 142

Under a contract with Lufthansa, Blom & Voss developed the Ha 142 mail plane, the first flight of which took place on October 11, 1938. Unlike the Ha 139, the floats were replaced by wheeled landing gear. In the summer of 1939, four vehicles under the designation Wu 142 were flight tested.

After the start of the war, Wu 142 was converted into a long-range naval reconnaissance aircraft. The forward part of the fuselage was lengthened to accommodate the bombardier, defensive weapons were installed, the cargo compartment was redesigned to carry a bomb load, and additional radio and navigation equipment was installed. In the autumn of 1940, the first two machines under the designation Vu 142/01 were in the 2./Aufkl.St.Ob.dL, two more machines operated in the K.Gr.zbV 105. In 1942, the aircraft were removed from service due to their low flight characteristics and small bomb load.

Characteristics of the Vu 142: crew - 6 people, power plant - 4 BMW 132N-1 engines with a capacity of 880 hp each. With. (656 kW), wing span - 29.5 m and its area - 126.0 m², aircraft length - 20.45 m, height - 4.4 M, empty weight - 11,090 kg, takeoff weight - 16,575 kg, maximum speed - 371 km / h at the ground, cruising speed - 323 km / h at an altitude of 2000 m, flight range - 3872 km, practical ceiling - 9000 m, armament - 5 MO 15 machine guns and 400 kg of bombs.

Wu 222

The development of a large flying boat Wu 222 "Wiking" ("Viking"), equipped with six Vgato 323R-2 engines, began in 1936. The aircraft was originally intended to carry 24 passengers on airlines in the North and South Atlantic. The first flight of the prototype took place on September 7, 1940, after the completion of the flight test program, the prototype was involved in combat operations. The first flight in the interests of the Luftwaffe was carried out on July 10, 1941 on the route Hamburg - Kirkenes (Norway), later the aircraft began to fly regularly to North Africa. Despite the fact that the Wu 222VI had Mow-armament - seven 7.92-mm and 13-mm machine guns and two underwing gondolas with coaxial 13-mm machine guns,

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The OH was usually escorted by a pair of VG 110 fighters on missions.

On the third experimental machine, two turrets with a 20-mm cannon each were added, the turrets were mounted on the top of the wing between the external engines. By March 1943, seven experimental vehicles with various armament options were completed. Production aircraft were intended for use as a long-range maritime reconnaissance and patrol aircraft, the Wu 222 could carry 92 paratroopers in full gear.

The prototype of the A series was the fourth experimental aircraft Vu 222V4, the prototype of the C series was the Vu 222M7 (the first flight took place on April 1, 1943). All experimental vehicles were part of the See 222 naval transport squadron operating in the Mediterranean region, three vehicles were lost (two were shot down by fighters and one drowned during an emergency landing on water near Athens). The remaining aircraft (Vu 222V2, Vu 222M3, Vu 222V4 and Vu 222M5) were converted for naval reconnaissance in the Atlantic, they were equipped with FuG 200 search radars. The Vu 222V3 and Vu 222V5 aircraft were destroyed at their anchorage in Biscarosse by Allied fighters in June 1943, another boat was shot down by a British fighter in the Bay of Biscay in October Toro of the same year. Vu 222V2 was destroyed during the liberation of Norway by the Allies. |

A total of 13 C-series vehicles were built, they were equipped with the See 222 squadron, another 4 unfinished vehicles were scrapped due to the termination of the program at the beginning of 1944. At the end of the war, Vu 222j-011 and Vu 222j-013 were captured by American troops and overtaken in the USA, Vu 222C-012 went to the British.

Characteristics of the Vu 222C: crew - 11 people, power plant - 6 Jumo 207C engines with a capacity of 1000 hp each. With. (746 kW), wing span - 46.0 m and its area - 247.0 m², aircraft length - 37.0 m, height - 11.0 m, empty weight - 30,700 kg, maximum takeoff - 49,000 kg, maximum speed - 387 km/h at an altitude of 5500 m, maximum flight range - 6000 km, maximum flight duration - 28 hours, time to climb 6000 m - 52 min, service ceiling - 7300 m, armament - 5 machine guns MG 131 and 3 MG 151 guns.

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"Bücker"

Carl Bücker served in the newly created naval aviation units during the First World War. After the end of the war, he moved to Sweden, where he participated in a program to build aircraft for the Swedish Navy. In 1923 Bücker founded Svenska Aero AB in Stockholm, of which he remained director until 1932, when the firm merged with ASJA. After returning to Germany, Bücker founded in October 1933 the firm "Bücker Flugzeugbau GmbH" in Mohannishtal (a suburb of Berlin). At the end of 1935, part of the production was transferred to Ransdorf, where new production facilities were built. Bücker created a number of sports aircraft, his Vi 131, Vi 133 and Vi 181 aircraft were quite well known in different countries at that time.

In 131

In 1934, Bücker developed its first biplane training aircraft, which received the designation Vee 131 "Jungmann" ("Young Man"). A prototype aircraft equipped with an 80 hp Hirth HM 60R engine. s., made its first flight on April 27, 1934.

According to the test results, the aircraft was accepted into the series under the designation Bu 131A, it was intended for both civilian flying schools and the Luftwaffe. Soon the company began producing a version of the Vee 131B with a more powerful engine. The Vi 131 aircraft were exported to Hungary and Romania, and also built under license in Switzerland and Japan. The total number of aircraft built by the firm exceeded 300 copies. During the war, Vi 131s were used by the Luftwaffe for pilot training and night attack squadrons. After the war, the aircraft was built by the Czechoslovak firm Aego under the designation C4.

Characteristics of the Vi 131V: crew - 2 people, power plant - 1 engine HM504A-2 with a capacity of 105 liters. With. (78 kW), wingspan - 7.4 m and their area - 13.5 m², aircraft length - 6.62 m, height - 2.25 m, empty weight - 390 kg, takeoff weight - 680 kg, maximum speed — 183 km/h near the ground, cruising speed — 170 km/h, range — 650 km, climb time to a height of 1000 m — 6.3 min, service ceiling — 3000 m.

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Bu 133

In 1936, a biplane training aircraft was developed under the designation Vi 133 "Jungmeister" ("Young Master"). Similar in general configuration and power structure to the Vi 131 aircraft, it differed from its predecessor by its smaller dimensions and the Ni HM 6 engine with a power of 135 hp. With.

According to the test results, the Luftwaffe ordered the machine in a series under the designation Vi 133A for use as a training aircraft for advanced training of flight personnel. Soon, the Dornier branch in Switzerland began licensed construction of the Vi 133V version with the Niy HM 506 engine with a capacity of 160 hp. With. The latest version of the TOM was the Vi 133C training and communication aircraft, equipped with a more powerful Siemens engine.

Sh14A-4. About 50 examples of this variant were built by Dornier in Switzerland and about 50 by CASA in Spain.

Characteristics of Vi 133C: crew - 1 person, power plant — 1 Sh14A-4 engine with a capacity of 160 hp. With. (119 kW), wingspan - 6.6 and their area - 12.0 m², aircraft length - 6.02 m, height - 2.2 m, empty weight - 425 kg, takeoff weight - 615 kg, maximum speed - 220 km/h near the ground, cruising speed - 200 km/h, range - 500 km, climb time to 1000 m - 2.8 min, service ceiling - 4500 m.

Wu 181

The first flight of the Bu 181 "Bestmann" ("Best Man") prototype aircraft took place in February 1939. After successful tests, the Luftwaffe ordered the mass production of the Bu 181 aircraft. This machine, produced in variants A and O, was intended for use as a transport and communication aircraft, as well as for towing gliders. Aircraft began to enter service with the Luftwaffe at the end of 1940, at the last stage of the war they were used as night attack aircraft. At the beginning of April 1945, a team of NSKdo Vi 181 night attack aircraft was formed, consisting of five squadrons (Pz.Jg.Staffel), in

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each squadron had OT 8 to 10 vehicles. Each aircraft was equipped with four Panzerfaust anti-tank grenade launchers (two above the wing and two under the wing).

The number of examples built for the Luftwaffe numbered several thousand. In addition to machines assembled at the Bücker company, 708 copies in 1944-1946 rr. produced by Fokker in the Netherlands. The Bu 181 aircraft was also produced until 1946 in Sweden under the designation Sk 25 and until 1951 in Czechoslovakia under the designations 2.281 and 2.381 (civilian variants), as well as C.6 and C.106 (military variants).

Characteristics of Bu 181A: crew - 2 people, power plant - 1 engine NM 504 with a capacity of 105l. With. (78 kW7t), wing span - 10.6 m and its area - 13.5 m², aircraft length - 7.85 m, height - 2.06 m, empty weight - 480 kg, takeoff weight - 750 kg, maximum speed - 215 km/h near the ground, cruising speed - 200 km/h, time to climb 1000 m - 5.3 min, service ceiling - 5000 m, range - 800 km.

"Gotha"

Gothaer Waggonfabrik AG, founded in July 1898, was originally engaged in the development and production of locomotives and wagons for the railway. In February 1913, an aircraft building department was created at the firm, and two months later the first training biplane aircraft had already taken off. During the First World War, the firm gained notoriety in aviation circles for its bombers that raided London in the summer of 1917. In addition to heavy bombers, Gotha also produced seaplanes, the most famous of which was the WD 14 biplane. It was used as a torpedo bomber, but due to the low power of the engines of that time, it could not take a large load to carry out effective attacks on ships. Soon WD 14 was modified into a long-range reconnaissance aircraft. In the 30s. The main task for Gotha was the licensed production of aircraft from other companies, as well as the production of heavy transport gliders.

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Go 145

The Go 145 biplane training aircraft was built immediately after the resumption of the activities of the Gota company, which was banned in 1919 in accordance with the Treaty of Versailles. A prototype powered by an Argus As 10C engine made its maiden flight in February

1934, in the following year, serial aircraft of this type began to be used in the Luftwaffe as trainers. The total number of aircraft built by Gotha, Aro, Focke-Wulf and BFW was about 10,000 copies, these aircraft were also produced under license in Spain under the designation CASA 1145-1 and in Turkey. From December 1942, the So 145 began to be used as a night bomber.

Characteristics of Co 145C: crew - 2 people, power plant - | As 10C engine with 240 hp. With. (179 kW), wingspan - 9.0 m and their area - 21.75 m², aircraft length - 8.7 m, height - 2.9 m, empty weight - 880 kg, take-off weight - 1380 kg, maximum speed - 212 km / h near the ground, cruising speed - 180 km / h, service ceiling - 3700 m, climb time to a height of 1000 m - 5.5 min, range - 630 km, armament - | machine gun MG 15.

So 242

In 1940, at Gotha, under the leadership of Albert Kalkert, a transport glider of a two-beam scheme was developed under the designation Co 242. fabric upholstery. In the rear fuselage there was a hatch through which the machine was loaded. The crew consisted of two people, 21 paratroopers could be placed in the cargo compartment. The landing gear consisted of three landing skis, the glider was taken off on a two-wheeled bogie. The first two prototypes were tested in the spring of 1941.

The A series gliders (cargo Go 242A-1 and landing Go 242A-2) were armed with four MC 15 machine guns - one in the wing, one in the rear of the fuselage and two in the side windows.

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The first gliders entered service in August 1941, and by the end of the year, the Luftwaffe received more than 250 gliders, which made it possible to form six glider squadrons. In the summer of 1942, the transport groups K.Gr.zbV 5 and K.Gr.zbV 30 received Go 242 for operations as part of the 4th air fleet in the southern sector of the Soviet-German front. A separate squadron "Don" consisted entirely of Co 242, He 111 bombers were used as glider tugs.

By the end of 1942, the production of the Go 242A was discontinued, and the Go 242B variant with a fixed wheeled landing gear instead of landing skis went into production. Gliders Go 242B-1 and Co 242B-2 were carried out in the cargo version, and Go 242B-3 and Co 242B-4 in the parachute version with additional doors in the tail section. In the spring of 1944, Go 242 gliders supplied the 1st Tank Army, surrounded at Kamenetz-Podolsky, and then were transferred to the Crimea. Some gliders were converted to transport the wounded, and some gliders were converted into mobile workshops and operating rooms for use at advanced airfields. | In 1944, another version was launched into the series - Co 242C-1, adapted for landing on water. This version of the airframe was supposed to be used to attack the British naval base at Scapa Flow with Italian SLC man-guided torpedoes. The glider fuselage had the shape of a boat, air bags were installed inside the hull to increase buoyancy, and there were stabilizing floats under the wing. The glider took off behind a tug on a drop two-wheeled cart, it had to carry one SLC torpedo and its crew of two people. It was assumed that a group of Go 242C-1 gliders, having splashed down near Scapa Flow, would unload torpedoes with their crews, whose task would be to penetrate the harbor and carry out sabotage attacks on the ships stationed there. However, the planned operation did not take place.

The total production of Co 242 gliders during the war years amounted to more than 1500 copies, of which 133 were converted into Co 244 - a version of a motor glider with two engines.

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Characteristics of the Go 242A-1: wingspan - 24.5 m and its area - 62.4 m², airframe length - 15.8 m, height - 4.25 m, empty weight - 3200 kg, maximum take-off weight - 7300 kg, the maximum speed during planning is 290 km / h.

Go 244

At the end of 1941, several Go 242B gliders were converted into prototypes of the Go 244 troop transport aircraft. At the beginning of the next year, after successful prototype testing, conversion of 133 Go 242 gliders into Go 244 began. Most of the aircraft were equipped with Gnome Rhone engines. » 14M4/5, several vehicles had BMW 1327 engines or captured Soviet M-25A engines. By September 1942, Gotha delivered 10 aircraft, and in November another 29 aircraft. Go 244 was in service with transport groups K.Gr.KbV 104 and K.St.k.L.U 106, who fought on the Soviet-German front. The experience of combat use revealed the main drawback of the Go 244 - the power of the aircraft's power plant was clearly low, the aircraft could not stay in the air on one running engine. Soon the surviving vehicles were transferred

to flight schools.

Characteristics of Go 244: power plant - 2 Gnome Rhone 14M4 / 5 engines with a capacity of 700 hp each. With. (522 kW), wing span - 24.5 m and its area - 64.4 m², aircraft length - 15.8 m, height - 4.7 m, empty weight - 5100 kg, maximum takeoff weight - 7800 kg, maximum speed - 290 km / h at an altitude of 4000 m, service ceiling - 7500 m, climb time to a height of 3000 m - 11 minutes, range - 600 km, armament - 4 machine guns MG 15.

Ka 430

In 1943, the project of an airborne glider was completed under the designation Ka 430 (named after the company's technical director Albert Kalkert). The cargo compartment of the fuselage ended with a ramp through which it was possible to load large objects. In the forward part of the fuselage, a battery of brake rockets was provided to ensure the possibility of landing on small areas. By

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According to the test results of the experimental machine, 30 pre-production Ka 430A-0s were ordered at the Mitteldeutsche Metallwerke in Zfurf. The first of the pre-production machines was completed at the end of 1944, but only 12 gliders were built before the end of the war.

Characteristics of the Ka 430-0: wingspan - 19.5 and its area - 38.7 m², airframe length - 13.2 m, height - 4.2 m, empty weight - 1810 kg, takeoff weight - 4600 kg, maximum CKO towing speed — 300 km/h, maximum glide speed — 320 km/h, armament — 1 machine gun MG 131.

| Dornier

Claudius Dornier began his career in aviation by joining the Zeppelin Luftschiffsbau in 1910. From 1915 to 1918 he led the production of all-metal aircraft, including large flying boats, at the subsidiary Zeppelin Werke Lindau GmbH ". In 1922 Zeppelin Werke Lindau GmbH became Dornier Metallbauten GmbH. Since the production of large aircraft in Germany after the First World War was prohibited, K. Dornier began the production of the flying boat "Wal" ("Kit") in Italy at the company he created CMASA. These boats were used for postal and passenger traffic in 1920-1930, the number of vehicles built during the TOT period exceeded 260 units. In 1926, Dornier moved to Switzerland, where he founded a new firm, AG fur Dornier Flugzeug, and began designing the largest flying boat of that time, the 12-engine Do X. The 1931 Do XB made a demonstration flight on four continents. Since 1932, Dornier worked again in Germany, heading the Dornier Werke GmbH (Dornier Werke GmbH).

Do 17

In 1934, the company received an order from Lufthansa for the development of the Do 17 passenger aircraft. The first prototype Do 17M1 took off in the fall of the same year, and two more aircraft were built by the end of the year. In 1935, Lufthansa held

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testing all three aircraft and came to the conclusion that the Do 17, capable of carrying only 6 passengers, was not suitable for practical use.

However, the Luftwaffe became interested in the aircraft, so the company received an order to develop the Do 17E-1 bomber and the Do 17E-1 long-range reconnaissance aircraft. Preparations for their mass production began in 1936, and a year later the first vehicles entered service with the KG 153 and KG 155 bomber squadrons and the ASH long-range reconnaissance group! From (2)/122.

In the spring of 1937, 15 Do 17F-1s were sent to Spain as part of the Condor Legion.

The high degree of invulnerability demonstrated by the Do 17E-1 in the skies of Spain became the basis for the decision to urgently re-equip all reconnaissance squadrons of the Luftwaffe with this aircraft. In 1938, improved modifications of the Do 17M and Do 17P began to enter service, by September of the same year, the Luftwaffe already had 479 Do 17 vehicles of four variants - E, E, MiR.

The Do 17M variant was ordered by Yugoslavia. The first export aircraft was delivered in October 1937, and at the beginning of 1940 licensed production of the aircraft was established at the aircraft factory in Kraljevo.

By September 1939, about 370 Do 17F-1 and Do 17Z-2 medium bombers were already in service, with which nine bomber squadrons were equipped. These divisions | September 1939 ensured the invasion of Poland. Although the Do 17 did not have great speed, the OH was easy to handle. Its design was strong enough, it could even, leaving from under the attack of enemy fighters, roll over over the wing and dive sharply down. In Poland, Do 17 aircraft carried out a large number of strafing airfield attacks. Aircraft Do 17Z-2 from 10.(Croat) / KG3 operated in the central sector of the Soviet-German front in December 1941, squadrons KG 2 and KS 3 continued to use Do 17 until the end of 1942.

In the role of a night fighter, the Do 17Z-3 variant was used with a nose section converted to an infrared detector and reinforced small arms. Was built

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nine machines of this modification, which received the designation Do 17F-10, were delivered to BI/NJG 2 at the end of 1940. Compared to the Ju 88, its production was stopped in the summer of 1940. In total, about 1200 copies of the Do 17 of all modifications were produced.

Characteristics of the Do 17Z-2: crew - 5 people, power plant - 2 Vgato 323P engines with a capacity of 1000 hp each. With. (746 kW), wing span - 18.0 m and its area - 55.0 m², aircraft length - 15.8 m, height - 4.6 m, empty weight - 5200 kg, maximum takeoff - 8590 kg, maximum speed - 410 km / h at an altitude of 4000 m, cruising speed - 270 km / h, maximum flight range - 1500 km, practical ceiling - 8200 m, armament - 4 (later up to 8) MG 15 machine guns and up to 1000 kg of bombs.

Do 18

In the summer of 1934, the construction of four experimental Do 18 aircraft began, intended to replace the Wal flying boats on the Lufthansa mail line across the South Atlantic.

The first Do 18a took off on 15 March 1935, powered by two 540 hp Jumo 5 engines. with., rotating the pulling and pushing screws. After testing, all four ordered aircraft under the designation Do 18E were put into operation on the Atlantic routes. Another aircraft under the designation Po 18E was delivered to Lufthansa, at the end of March 1938 it set a flight range record for seaplanes (8340 km).

The BoeHHbIM version of the boat was the Do 18D, powered by two Jumo 205C engines. As a medium-range naval reconnaissance aircraft, it was adopted by coastal aviation units in September 1938 (modifications Do 180-1 and Do 180-2). By the beginning of the war, Ki was equipped with Do 18p aircraft. ET. Og. 106, Ku.FI.Gr. 406, Ku.FI.Gr. 506, Ku.FI.Gr. 806 and Ku.FI.Gr. 906. Then the Do 186-1 version with more powerful engines and reinforced small arms entered service. By the end of 1939, Do 186-1s were delivered to Ku.FI.Gr. 106, Ku.FI.Gr. 406

And

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Key. E].Og. 906. The total number of Do 18 flying docks built before production ceased in September 1940 was 100 copies.

Six squadrons with Do 18s took part in the fighting in France, but in June 1940 most of the machines were withdrawn for conversion into the Do 18H training version and the Do 18N-1 sea rescue version. During the Battle of England, aircraft from 2./Ku.FI.Gr. 106 carried out search and rescue of crews of downed German aircraft in the English Channel area. Aircraft Do 18N-1 from squadron 3./Ki.El.St. 906 participated in operations in the North Sea until 1942, Do 186-1 boats were used in the Mediterranean in 1941 in the area of Malta-Sicily.

Characteristics of Do 18G-1: crew - 4 people, power plant - 2 Leto 2050 engines with a capacity of 880 hp each. With. (656 kW), wing span - 23.7 m and its area - 98.0 m², aircraft length - 19.37 m, height - 5.32 m, empty weight - 5980 kg, maximum takeoff - 10 800 kg, maximum speed — 266 km/h at an altitude of 2000 m, maximum flight range — 3500 km, service ceiling — 4200 M, armament — | cannon MG 151, 1 machine gun MG 131 and up to 200 kg of bombs.

Do 22

In 1934, the development of a torpedo bomber and reconnaissance aircraft began under the designation Do 22. The first prototype, equipped with: Hispano-Suiza 12Ybrs engine and float landing gear, took off in 1935. Do 22Kg machines by Greece (beginning of deliveries in 1939). The first model of the land version with a wheeled landing gear took off on March 10, 1939 under the designation Do 221.

Aircraft Do 22 of the Greek and Yugoslav BBCs took part in the hostilities against Italy, which attacked first Greece and then Yugoslavia. Most of the Greek aircraft were lost, and in April 1941 8 Yugoslav aircraft flew to Egypt, forming the 2nd (Yugoslav) squadron there. Zta squadron as part of the allied

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troops patrolled the Mediterranean. The Germans delivered four Do 22 aircraft with wheeled and float landing gear in 1941 to Finland, where they were in service with the T/GeGu 6 squadron and were used for coastal reconnaissance and anti-submarine operations on the Soviet-German front.

Characteristics of Do 221; crew - 3 people, power plant - | Hispano-Suiza engine 12Ybrs 860 hp With. (641 kW), wing span - 16.2 m and its area - 43.5 m², aircraft length - 12.9 m, height - 4.65 m, empty weight - 2300 kg, take-off - 3700 kg, maximum

speed — 360 km/h at an altitude of 4000 m, flight range — 1500 km, service ceiling — 8200 m, armament — 3 (4) 7.9 mm machine guns, one 800 kg torpedo or 200 kg bombs.

Do 24

The development of the Do 24 flying boat began in 1935 under a contract with the Dutch government (a total of 12 aircraft were ordered). First flight of a boat equipped with three Wright engines R-1820 with a capacity of 890 hp. s., took place on July 3, 1937. The following year, this machine and 11 more machines under the designation Do 24K were delivered to Holland. Soon the Dutch company Avirolanda began production of 25 licensed Do 24 machines, some of which ended up in the hands of the Germans in May 1940 after the occupation of Holland. During the "Battle of England" there was an OCT-ray need for the organization of rescue services at sea, for this purpose, the Dutch Do 24K-2 vehicles were transferred to Germany for upgrading to the Do 24N-1 version and testing.

Aircraft production in Holland resumed in 1941 under the control of the Germans, 16 aircraft in the versions of the Do 24T-1 naval reconnaissance aircraft and the Do 24T-2 transport aircraft were completed in the same year. In 1942, the French company CAMS ("Chantiers Aéro-Maritimes de la Seine"), which specialized in the development of seaplanes, joined the Do 24 G production program and, in addition to 154 Dutch

,cars, built 46 more cars. The Luftwaffe operated three rescue squadrons equipped with boats.

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Kami Do 24N, they were based near Marseille and in Biscarosse. In addition, a small number of machines of this type were in service with the 2nd and 3rd squadrons KO 200.

Characteristics of the Do 24T-1: crew — 5 (6) people, power plant — 3 Vgato 323K-2 engines with a capacity of 1000 hp each. With. (746 kW), wingspan - 27.0 m and its area - 108.0 mg, aircraft length - 22.0 m, height - 5.75 m, Bec nyc-Toro - 9100 kg, maximum takeoff - 18 400 kg, maximum speed - 340 km/h at an altitude of 2000 m, time to climb 2000 m - 14.5 min, maximum flight range - 4750 km, service ceiling - 5900 m, armament - | cannon MG 151, 3 machine guns MO 15 and up to 1250 kg of bombs.

Do 26

By order of Lufttanz, in 1936, work began on the seaplane Do 26, capable of making non-stop flights on the Lisbon-New York route. The first of three ordered Do 26s took off on May 21, 1938. A year later, two machines were already in operational service, performing postal transportation in the South Atlantic. Based on the results of the pilot operation, Lufthansa ordered the construction of three more machines.

At the very beginning of the war, RLM ordered all subsequent machines, starting with the third one, to be produced in military versions - naval reconnaissance and transport aircraft, weapons, necessary military equipment and radio stations were installed on them. Four Do 26Ds, together with the second prototype aircraft taken from Lufthansa, were transferred to squadron 1./Ku.FI.Gr 406, in which they took part in the capture of Scandinavia.

Characteristics of Oo 26: power plant - 4 Lito 2050 engines with a power of 880 hp each. With. (656 kW), wing span - 30.0 m, its area - 116.0 m², aircraft length - 24.6 m, height - 6.8 m, empty weight - 11,300 kg, maximum takeoff - 22,500 kg, maximum speed - 320 km / h at an altitude of 2600 m, time to climb 2000 m - 16.5 minutes, maximum flight range - 7000 km, service ceiling - 4500 m, weapons - | cannon MG 151 and 3 ny-blades MG 15.

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Do 215

The Oo 17Z-0 variant became the prototype for an export aircraft under the designation Do 215A-1, equipped with two OB 601 engines. Orders for this bomber variant were received from Sweden and Yugoslavia. The production of the aircraft began in August 1939, but not a single aircraft was delivered to foreign customers, they were requisitioned by the Luftwaffe. After some refinement, these machines received the designation Do 215B-0, in parallel, work began on the reconnaissance bomber Do 215B-1, equipped with three cameras and capable of carrying 1000 kg of bombs.

In the spring of 1940, several new scouts entered AshK] Ot. OB.a Guy 1. (E) / 124, at the end of 1941, squadron 1. (E) / 100, which fought on the Soviet-German front, was completely re-equipped with Do 215 aircraft. In 1940, the Do 215B-5 night fighter was developed, equipped with DB 601A engines, two cannons and four machine guns. The first machines in the spring of 1941 were delivered to the night fighter squadron 4./NJG 2. Between April and June 1941, 18 British bombers were put out of action by the aircraft of this squadron, later II/NJG were armed with Do 215B-5 machines. 2 and NJG 1. Before the invasion of German troops into the territory of the Soviet Union, detailed reconnaissance of the area was provided by the Aufkl.Gr.Ob.dL group, armed with Do 215B-2 and He 111 aircraft. Until the beginning of 1943, the Soviet-German front, three squadrons operated with Oo 215.

Characteristics of Do 215B-1: crew — 5 (6) people, power plant — 2 OB 601A engines with a capacity of 1075 hp each. With. (802 kW), wing span - 18.0 m and its area - 55.0 m², aircraft length - 15.86 m, height - 4.56 m, empty weight - 4740 kg, maximum takeoff - 9200 kg, maximum speed - 470 km / h at an altitude of 5000 m, cruising speed - 415 km / h, maximum flight range - 1550 km, practical ceiling - 9500 m, armament - 4 machine guns MS 15 and up to 1000 kg bombs.

Oo 217

The Do 217M1 prototype, powered by two OV 601A engines, made its first flight in August 1938. After testing the prototype, the company received an order for a pre-production

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the batch consisted of eight Do 217ÿ-0 long-range reconnaissance aircraft and four Do 217ÿ-0 bombers with DB-601A engines. Po 217A-0 had three MG 15 machine guns as defensive weapons and was equipped with two cameras. All eight scouts were sent to the first and third squadrons Aufkl.Gr.Ob.DL, in which they photographed the territory of the Soviet Union in the winter of 1940/41 in preparation for the German invasion.

The bomber Do 217ÿ-0 differed from the reconnaissance aircraft Do 217A-0. installation of one MS 151 cannon, two MG 15 machine guns and the ability to take up to 3000 kg of bombs. All four machines of this version were used for various tests. From the spring of 1940, all work was concentrated on the Do 217E version, equipped with two BMW 801 MA engines. Pre-production Do 217E-0 appeared by the end of 1940, Oo 217E-1 bombers - at the beginning of the next year. They had defensive armament of one MG 151 cannon and five MG 15 machine guns and could carry 2,000 kg of bombs. Equipped with cameras, ten Oo 217E-0 and E-1 vehicles, delivered on 2.(E)/11, were already making reconnaissance flights along the borders of the Soviet Union in January 1941. By the end of 1941, the Vluftwaffe was in service with about three hundred Do 217Es of the E-0, E-1 and E-3 versions.

At the end of 1941, Po 217E-4 equipped with VMUU-801S engines began to roll off the assembly line. A small number of these aircraft, designated Do 217E-5, were adapted to carry H\$ 293 missiles. Several E-5 aircraft were used on the Baltic Sea coast in the training and test "team 36" in the Harz, which was engaged in developing combat use tactics. H\$ 293 missiles and FX 1400 glide bombs. Do 217E aircraft from KG 2 made up the bulk of the Luftwaffe bomber force against

England in April and May 1942. In the autumn of the same year, a new version of the Do 217K with BMW 8010 engines appeared in service with the KS 2.

In the middle of 1943, P/KO 100 and Sh/KS 100 were withdrawn from the Soviet-German front to re-equip the Ha Po 217E-5 and Po 217K-2, respectively. The rearmed units were transferred to France. The Germans achieved their first success on August 27, when the bombers

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fired by Hs 293A missiles sank two Canadian warships in the Bay of Biscay. In the Mediterranean, on 9 September, Sh/KO 100 aircraft sank two Italian warships, the Cat and the Italia, which had gone over to the Allied side. The total number of Do 217s built during the war years was more than 1,730.

Characteristics of Oo 217E-5: crew - 4 people, power plant - 2 BMW 801C engines with a capacity of 1580 hp each. With. (1178 kW), wing span - 19.0 m and its area - 57.0 m², aircraft length - 18.2 m, height - 5.02 m, empty weight - 8855 kg, maximum takeoff - 16 465 kg, maximum speed - 515 km / h at an altitude of 5200 m, climb time of 925 m - 4.45 min, flight range - 2300 km, service ceiling - 9000 m, armament - 6 machine guns (one 15-mm, two 13-mm and three 7.92-mm) and two 1045-kg missiles Hs 293A under the wing.

Do 317

The high-altitude bomber, which participated in the competition under the Bomber-B program, was a further development of the Oo 217 aircraft. The bomber required a flight range of up to 3600 km to reach any point in the British Isles from bases in France and Norway. The aircraft was supposed to have a pressurized cockpit for the crew and remote-controlled machine gun installations.

The company was ordered six experimental Oo 317A machines, the first machine entered the test in 1943. The tests did not reveal any advantages over the Do 217R-0 aircraft, so the remaining five machines were produced under the designation Do 217R as carriers of Hs 293A missiles, and the program was terminated. The Do 217R aircraft entered service with the PICS 100. At the same time, the Do 317B version was designed with more powerful OV 610A engines, a wing span increased to 26 m and a bomb load increased to 5600 kg, but by the time the program was terminated, they only managed to build a full-size wooden mock-up.

Characteristics of Oo 317A: crew - 4 people, power plant - 2 engines OV 603 with a capacity of 1750 liters each. With. (1305 kW), wingspan - 20.65 m, aircraft length - 16.8 m,

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height - 5.45 m, maximum weight - 24,000 kg, maximum speed - 665 km/h at an altitude of 7600 m, cruising speed - 536 km/h, flight range with additional fuel tank - 4000 km, practical ceiling - 10 500 m, armament - 1 cannon MG 151, 4 machine guns MG 131, 2 machine guns MC 81 and 3000 kg of bombs.

Up to 335

In November 1942, requirements were published for a single-seat strike aircraft capable of carrying a 500 kg bomb at speeds in excess of 700 km/h. Initially, cannon armament was not provided, but BCKOpe was followed by additions to the terms of reference with the requirements for the aircraft to perform the functions of a fighter-bomber. The firms "Arado", "Dornier" and "Junkers" participated in the competition.

Dornier presented the Do 335 "Pfeil" ("Arrow") aircraft project. The features of a single-seat fighter-bomber were a tandem arrangement of engines,

the front of which rotated the pulling screw, and the rear - the pusher, and cruciform plumage in the tail section. K. Dornier, who received a patent for an aircraft of such a scheme back in 1937, initially worked on the Do P.59 aircraft project. In order to test individual technical solutions, a small aircraft Gö 9 ("Göppingen 9") was developed. Flight tests of the GO 9 were carried out in the first half of 1940, and the results obtained were used later in the development of the Do 335 aircraft.

The cockpit of the Do 335 was equipped with an ejection seat, a Revy C12/D sight used for both cannon firing and dive bombing, a FuG 167 R/T radio compass, FuG 25a and FuG 125a stations. During catapulting, the upper keel and rear propeller were dropped; in the event of a forced landing on the fuselage, the lower KEEL was dropped.

The first flight of the Do 335V1 took place on October 26, 1943, the ninth machine (Do 335V9) became the prototype of the A series, which was tested with full armament in Rechlin in May 1944, after which it was transferred to the 1st Squadron under - separation of experienced Luftwaffe aircraft. Then after

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produced the first pre-production aircraft Do 335A-0 (VG+PG), intended for military testing as a single-seat fighter-bomber. Several Do 335A-0 vehicles were in service with the optional "335 Squadron", which was formed in September 1944 to practice the tactics of combat use of the Do 335. late autumn 1944, they practically did not differ from pre-production machines, with the exception of the installation of DB-603E-1 engines. By the time the American troops captured the factory in Oberpfaffenhofen, 13 Do 335A machines had been built and 15 more were under assembly.

Characteristics of Do 335A: crew — | people, 2 engines OV 603E-1 with a capacity of 1900 hp each. With. (1417 kW), wing span - 13.8 m and its area - 37.3 m², aircraft length - 13.85 m, height - 5.0 M, empty weight - 7266 kr, takeoff - 9600 kg, maximum speed At an altitude of 6500 m - 758 km/h, cruising speed - 682 km/h, range at a speed of 450 km/h - 2050 km, climb time At an altitude of 8000 m - 14.5 min, service ceiling - 11,400 m, armament - 1 gun MK 103, 2 guns MO 151, 2 SC 250 bombs in the bomb bay and 2 SC 250 bombs on the outer

pendants.

DFS

The German Gliding Research Institute (DFS) was organized in the early 1930s. on the basis of the glider society "Rhen-Rossitten Gesellschaft", founded in 1925 in the Wasserkup. In 1939, the DFS was transferred to Darmstadt-Griesheim, and Professor Walter George was appointed its director. The Gliding Institute included the following departments: meteorological department, aerodynamics department, instrument department, glider design department, and after joining the work of Professor A. Lippisch, also the department for the development of tailed aircraft.

Prototypes of the developed designs were made in the workshops of the institute in Darmstadt-Griesheim and Airing, where the main branch was located. Serial production was carried out at Gota and other enterprises

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ties. In addition to work on the Mistel program (composite aircraft), the institute developed several successful projects, including the DFS 332 motor glider, the DFS 228 rocket glider and the DFS 346 supersonic reconnaissance aircraft. aircraft carriers in the air, the director of DFS V. Georgiy was appointed the coordinator of all research and design work in this area.

DFS 230

The DFS 230 glider was first demonstrated to the top military leadership in 1937. It was intended to carry 8 people, it was towed behind a Ju 52 / 3t aircraft, while the towing aircraft could simultaneously tow up to six DFS 230 gliders.

With the help of DFS 230 gliders, German paratroopers carried out one of the most unusual operations of the Second World War. At 5:20 am on May 10, 1940, 11 DFS 230A-1 gliders landed on Fort Eben-Emael in Belgium and landed a sabotage group "Granit" consisting of 84 people, taking the fort's garrison by surprise. Each group of paratroopers attacked its target, while against artillery towers and shelters cumulative charges weighing 12.5 to 50 kg were used, grenades and explosive packages were thrown into the holes pierced by the explosion. After an hour-long battle, most of the fort was captured by paratroopers. As a result of this operation, a day later the entire fort was under the control of the approaching German troops. The losses of the Germans amounted to 6 killed and 11 wounded, among the defenders - 23 killed and 59 wounded.

The largest operation involving DFS 230 was the operation to capture the island of Crete a year later, the number of gliders simultaneously involved was 53 instances. However, the loss of gliders during the landing was such that the Germans never again attempted operations of this kind.

The DFS 230 B was towed under normal conditions using a 40 m rope, at night or in bad weather

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conditions, a rigid hitch was used. In 1942, it was proposed to use the glider as part of the so-called Mistel scheme, while the towing aircraft was mounted on the back of the glider. Initially, a Klemm light aircraft KI 35B, installed on the back of the glider, was used as a towing vehicle. The Mistel was lifted into the air in tow behind a Ju 52 aircraft, after which it was uncoupled. The engine power of the KI 35V aircraft was enough for the joint flight of the coupler. Then, in a series of tests, the Fw 56 and Bf 109 were used as an aircraft. The tests were successful, they demonstrated the ability of the formation to take off independently due to the operation of the fighter engine.

DFS 230A gliders were in service with the airborne squadrons LLG 1 u.LLG 2, as well as individual glider squadrons. Usually they were used to supply German groups that were surrounded. For example, in January 1943, the gliders of the LLG 1 squadron operated from the Kerch Peninsula, supplying the German troops in the Kuban. From January to October the glider squadrons suffered heavy losses, especially during the winter months.

The DFS 230B-1 version was similar to the DFS 230A-1 version, but had a drag parachute and defensive armament. These gliders were used in North Africa, but the most famous operation involving the DFS 230 was the operation to rescue Mussolini, who was under arrest at the Rifugio Hotel in the remote Gran Sasso mountain range. To release the Italian dictator, a group of Otto Skorzeny was delivered on 12 DFS 230C-1 gliders (such a designation was given to gliders with three brake rocket engines in the bow). The group of 120 people, in addition to Skorzeny himself, included: Italian General Soletti, 12 pilots, 90 paratroopers and 16 saboteurs from the SS special team. Skorzeny decided to land troops right on the mountain meadow next to the hotel. During take-off from Pratica de Mare airfield, two overloaded gliders overturned, and two more gliders were lost during the flight. As a result of the operation, Mussolini was released, after which he was taken out on an E! 156 accompanied by Skorzeny.

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A later version of the DFS 230F-1 airframe could carry 15 people. At the beginning of 1945, the Luftwaffe had five glider squadrons, but by April 25 their number

reduced to three squadrons. In total, over 1,500 copies of the DFS 230 were produced during the war years.

Characteristics of the DFS 230V-1: wingspan - 20.87, area - 41.3 m², length - 11.24 m, height - 2.74 m, empty weight - 860 kg, takeoff weight - 2100 kg, maximum CKO - towing speed - 210 km / h.

"Siebel"

In 1936, the Klemm branch in Halle became an independent enterprise under the name Flugzeugbau Halle GmbH, it began licensed production of the Fw 44 aircraft. After some time, Fritz Siebel, a former employee of H. Klemm, changing the name of the company to "Siebel Flugzeugwerke AG". In addition to the Fw 44, the production of the He 46, Po 17 and Fh 104 aircraft began. During the war, the 51 204 aircraft was produced, the wing planes for the Ju 88 aircraft were produced and work was carried out on the instructions of aviation institutes, for example, the DFS aircraft was built 346.

Fh 104

The Klemm firm (a branch in Böblingen) developed a project for a light passenger aircraft under the designation KI 104. this project. After the Klemm branch in Hull became an independent HbIM enterprise, the RLM renamed the aircraft Fh 104 (after the name of the chief designer). A prototype light passenger aircraft Fh 104 "NaPoge" made its first flight on February 25, 1937, in the same year, serial production of the Yei 104A variant began. In 1938, the Fh 104 aircraft won several international

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competitions in Italy and Germany, in particular, in September, during a flight across 12 European countries, it flew 6,200 km in 21 flight hours.

In total, the Siebel company built 46 Fh 104A vehicles, which were requisitioned by the Luftwaffe during the war years and were used to provide communications, transport personnel and urgent cargo.

Features Fh 104A: crew - 1 person, power plant - 2 Niy NM 508C engines with a capacity of 270 liters each. With. (201 kW), wingspan - 12.1 m, its area - 22.3 m², aircraft length - 9.5 m, height - 2.64 m, Bec myc-Toro - 1510 kg, maximum takeoff Bec - 2350 kg, maximum speed - 350 km / h, service ceiling - 6600 m, range - 920 km, number of passengers - 4.

Si 204 |

The Si 204 aircraft was intended for training summer crews, as well as as a transport, ambulance and communications aircraft. The first flight of an experimental machine equipped with two Az 410 engines with a power of 450 hp each. with., took place at the beginning of 1941. The cockpit was designed for two crew members and eight passengers, if necessary, the passenger seats could be removed, and up to 1540 kg of cargo could be placed in the cockpit.

The aircraft was produced in two modifications - Si 204A and 51 2040. During the war years it was used as a trainer, liaison and transport aircraft, glider towing aircraft, ambulance aircraft, photographic reconnaissance aircraft, weather reconnaissance aircraft and light bomber. The total output by the end of the war amounted to 1175 vehicles. After the war, it was produced in Czechoslovakia under the designation C-103 and in France under the designation NC 701.

Characteristics of the Si 204: crew - 2 people, power plant - 2 As 411 engines with a capacity of 600 hp each. With. (447 kW), wingspan - 21.33 m and its area - 46.0 m², aircraft length - 11.95 m, height - 4.25 m, empty weight - 3950 kg, maximum takeoff 5600 kg, maximum speed - 226 km / h, service ceiling - 6400 m, range - 1000 km, number of passengers - 8.

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"Klemm"

Hans Klemm in April 1917 joined the Zeppelin AG airship construction company as a designer. From here, Klemm moved to the Napsa-Barn denburgischen Flugzeugwerken aviation enterprise, where he participated in the development of the Heinkel M 29 naval fighter. Shortly before the end of World War I, he was accepted as chief designer of the newly created aircraft building department Daimler-Werken in Sindelfingen.

Here, under his leadership, 1.b1.9 fighters, L 8 and L 14 reconnaissance aircraft, and the L 15 glider were developed. In 1924, the L 20 aircraft with a 20 hp Mercedes engine appeared. followed by further modifications - L 25, L 26, three-seat L 27, L 28 and the first sports aircraft KI 31 and KI 32. After the merger of Daimler and Benz, the aircraft building department was liquidated. In 1934, with the support of the RLM, H. Klemm set up a small company called Klemm Flugzeugwerke Halle/Saale GmbH, which employed about 100 workers, designers and engineers, and Franz Walter was appointed director. But soon Klemm left this enterprise and founded a new firm, Leichtflugzeugbau Klemm GmbH, for the production of light aircraft in Böblingen near Stuttgart. In August 1938 the company changed its name to "Hanns Klemm Flugzeugbau".

Until the end of 1940, the company was fully loaded with the manufacture of aircraft of its own designs, mainly KI 35, in addition, the company was engaged in the repair of aircraft Ag 65, Ag 66 and Ag 96. Then the production of power frames for Go 242 gliders and wing flat for Do 217 aircraft. In March 1943, the Klemm firm, by order of the KIM, was involved in work on the Me 163 missile fighter. In 1942, the firms had 1200 employees.

L 25

In 1927, for the first time, a prototype light training aircraft L 25 took off with an engine "Mercedes" with a capacity of 22 liters. s., the car went into mass production under the

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value L 25-1a with the engine "Za tsop" AD-9 with a power of 40 liters. With. This was followed by the float version of the WL 25-1a and the triple L 25-16. The total number of produced CAMO-flights was more than 700 copies of various modifications, 1, 25 were delivered to Hungary.

Characteristics of the L 25D UPC: crew - 2 people, power plant - | HM 60R engine with 80 hp With. (60 kW), wing span - 13.0 m and its area - 20.0 m², aircraft length - 7.5 m, height - 2.05 m, empty weight - 420 kg, takeoff weight - 720 kg , maximum speed - 160 km / h near the ground, cruising speed - 140 km / h, climb time to a height of 1000 m - 5.8 minutes, practical ceiling - 4800 m, range - 650 km.

KI 35

A prototype of the KI 35a training aircraft, equipped with an HM 60K engine, first flew in 1935. The second prototype, the KI 35b, equipped with a more powerful HBIM 504A engine, became the prototype of the production version of the KI 35B. The float version KI 35BW was exported. Since 1938, aircraft of the KI 35D version have been used in flight

schools of the Luftwaffe for initial training. He was also in service in Hungary, Romania, Slovakia and Sweden.

Characteristics of K1 35D: crew - 2 people, power plant - 1 engine HM 504A with a capacity of 105 hp. With. (78 kW), wingspan - 10.4 m and wing area - 15.2 m², aircraft length - 7.5 m, height - 2.05 m, empty weight - 480 kg, takeoff weight - 780 kg, maximum speed - 210 km / h near the ground, cruising speed - 195 km / h, service ceiling - 5100 m, range - 630 km.

"Messerschmitt"

Willy Messerschmitt, who built his first gliders during the First World War, received his higher education at the Munich Institute of Technology. In September 1923 he set up his own air force in Bamberg.

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glider and sports aircraft manufacturer Flugzeugbau Messerschmitt. In 1927, Messerschmitt's company merged with Bayerische Flugzeugwerke (BFW), based in Augsburg (Bavaria). Since 1935, BFW began manufacturing its own aircraft Bf 108 and licensed aircraft Ar 66, Go 145, He 45, He 50. In 1938, the company changed its name to Messerschmitt AG, and in 1940 began to expand its production. So, for example, at the end of 1944, 33,000 people worked at the firm's factories in Augsburg and Regensburg alone.

BE 108

In the spring of 1934, a prototype four-seat aircraft M 37 took off for the first time, which was soon given the designation Bf 108A "Taifun" ("Gaifun") according to the new RLM classification (Bf - by the name of the company "Bayerische Flugzeugwerke"). The Bf 108A was equipped with a Nisch HM 80 engine with a power of 250 hp. C., on some experimental machines the Argus engine was installed As | thrust 220 l. With.

Since 1935, the serial production of the Bf 108B version, equipped with an engine "Argus" As 10. In 1937-1938, the Bf 108B aircraft repeatedly became the winner of international competitions, and in July 1939 set a record height of 9075 m. With the outbreak of war, the Bf 108 aircraft was adopted by the Luftwaffe as a communications and auxiliary aircraft. In 1941, an experimental version of the machine was tested under the designation Bf 108T, which was a modernized Bf 108B with a Hirth HM 512 engine with a thrust of 400 hp. With.

The total number of vehicles produced was 885 copies, they were also in service with the BOCHHO-BO3-staff forces of Bulgaria, Hungary, Romania and Croatia. After the war, 285 machines were built by the French company SNCA under the designation Nord 1000 "Pingouin".

Characteristics of Bf 108: crew - 1 man, power plant — 1 As 10C engine with 240 hp. With. (179 kW), wingspan - 10.62 m and wing area - 16.4 m², aircraft length - 8.29 m, height - 2.1 m, empty weight - 860 kg, max.

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low takeoff weight - 1400 kg, maximum speed - 300 km/h from the ground, cruising speed - 265 km/h, climb time to an altitude of 1000 m - 2.9 min, service ceiling - 4800 m, range - 950 km.

BE 109

In the summer of 1934, the design of the Bf 109 fighter began, which was intended to replace the obsolete Arado Ar 68 and Heinkel He 51 aircraft. Competitive tests together with experimental aircraft Ar 80, Fw 159 and He 112. Based on the results of the competition, the RLM announced the winner of the BFW aircraft. The fourth prototype, designated Bf 109-01, was sent to Spain at the end of 1936, and in January of the following year two more

experienced machines.

The first production vehicles Bf 109B-1 "Bruno" ("Bruno") rolled off the assembly line in February 1937, they equipped the fighter squadron JG 132. ") with a Jumo 210Ga engine and armament of four MG 17 machine guns. In conditions of weak opposition from Polish fighters, they were used for ground attack. Until the end of 1939, almost all early fighter models were replaced by Bf 109E "Emil" ("Emil") machines, and Bf 109D ne roared into the air defense system of northern Germany, where they were used until the middle of 1940, after which they were removed from weapons. The fighter units participating in the invasion of the USSR had 440 fighters Bf 109F "Friedrich" ("Friedrich"). Deliveries of serial aircraft Bf 109G "Gustav" ("Gustav") with a DB 605 engine began in the spring of 1942, they were the first to rearm 1 / J C 2 and Sh / IO 26. At the end of the summer of 1942, the Luftwaffe had about 900 destroyers of Bf 109 series C and E.

In 1943, the development of the high-altitude fighter Bf 109H began, which had a fuselage from the Bf 109E with an extended wing and was equipped with a high-altitude DB-601 engine. He

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how many Bf 109H-I vehicles were undergoing military trials in France at the beginning of 1944. However, soon further work on the Bf 109H was stopped, as the RLM accepted the Ta 152H aircraft as a high-altitude fighter. The Bf 109T-2 Teodor variant was a fighter-bomber with an OB 601N or DB 601A engine and a bomb load of 250 kg. As part of the standardization program in 1944, a new version of the Bf 109K (Karl) fighter was created, which included all the successful modifications of the previous versions. Of the 14,000 Bf 109 fighters produced in 1944, the new Bf 109K model accounted for 754 copies. During the last months of the war in 1945, the Luftwaffe delivered another 2970 Bf 109 fighters, of which more than half were C-series, and the rest were K-series.

In 1942, the development of a heavy fighter and fighter-bomber under the designation Bf 109Z "Zwilling" ("Twin") began. The prototype machine had two fuselages from the Bf 109E aircraft, which were connected to the fuselage of the central rectangular section of the wing and stabilizer, the wingspan was 13.27 m. The serial version was developed on the basis of the Bf 109G fuselages using OV 605A or Leto 213E. The armament was to consist of four MG 108 cannons, the aircraft could carry a 500 kg bomb under the central section of the wing and one 250 kg bomb under each fuselage. The pilot was located in the cockpit of the left fuselage, the cockpit of the right fuselage was closed with a fairing, and an additional fuel tank was installed in its place. A prototype prepared for flight tests was destroyed in 1943 during an Allied air raid. In 1944, all work on the Bf 109Z was repainted.

Characteristics of Bf 109G-2: crew - 1 man, power plant - 1 engine DB 605A-1 with a power of 1475 HP. (1100 kW), wing span - 9.9 m, its area - 16.2 m², aircraft length - 8.85 m, height - 2.5 m, empty weight - 2255 kg, maximum takeoff weight - 3200 kg, maximum speed - 635 km / h at an altitude of 6300 m, climb time to a height of 10,000 m - 12.0 minutes, service ceiling - 12,000 m, range - 545 km, armament - 2 MG 17 machine guns and 1 MG 151 cannon.

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Bf 110

The Bf 110 heavy fighter, conceived in 1934, made its first flight on May 12, 1936. The following year, production of pre-production BE 110A-0 machines with Leto 2100 engines began. Mi Jumo 210G entered service in 1938 with the LG 1 training squadron, where the tactics of their use were worked out, and at the beginning of 1939 the first I / ZG 1 and I / ZG 76 were formed.

The following year saw the introduction of the Bf 110C with DB 601A engines. By the end of January, on 1(7)/I.S 1, deliveries of serial Bf 110C-1 machines began, and in the spring and early summer, the same machines entered service with the first formed groups of heavy fighters I / ZG 1 and I / ZG 76. These units were involved in the invasion of Poland, where they were first used to escort bombers. But with the weakening of the resistance of the Polish fighters, the Bf 110 switched to strikes against ground targets.

However, despite the appearance of a new version of the Bf 110, the experience of air battles over France and England in 1940 showed that the Bf 110 cannot fight on equal terms with enemy single-engine fighters. After the Toruń, heavy German fighters began to suffer heavy losses, their use from 1941 was mainly limited to ground attack and night fighter functions. In the late spring and early summer of 1941, the E-series fighter-bombers with a reinforced design and more powerful armor entered service. In addition, the Bf 110E received four underwing holders, which made it possible to increase the bomb load to 1200 kg, and DB 601M engines.

Aircraft of this series armed two units deployed on the Soviet-German front after the invasion of the USSR. These were squadrons ZG 26 and SKG 210, the last of which was formed from the E.Gr. 210, expanded to the size of a squadron and armed with BE 110E-1 aircraft after the failure to fine-tune the Me 210 aircraft. The aircraft of these units were soon joined by Bf 110E from I./ZG 1, they attacked airfields, armored vehicles and vehicles. Soon, the Bf 110E series cars began to roll off the assembly lines, which differed from the Bf 110E more. more powerful engines. Bf 110E was produced in modification

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fighter-bomber, reconnaissance, heavy fighter and night fighter missions.

An even more powerful version was the Bf 110G, which was produced in heavy fighter, fighter-bomber, reconnaissance and night fighter versions, some of which had a 37 mm cannon under the fuselage. In parallel with the Bf 110G, the VE PON version was produced, which differed slightly from the first. The total production of Bf 110 aircraft of all versions amounted to 6050 copies.

Characteristics of the Bf 110C-4: crew - 2 people, power plant - 2 DB 601A engines with a capacity of 1100 hp each. With. (820 kW), wing span - 16.27 m and its area - 38.4 m, aircraft length - 12.65 m, height - 4.1 m, empty weight - 5200 kg, maximum takeoff weight - 6750 kg, maximum - cruise speed - 560 km / h at an altitude of 7000 m, rate of climb near the ground - 660 m / min, practical ceiling - 10,000 m, range - 775 km, armament - 2 MO-EE cannons, 4 MG 17i meta bullets | machine gun MG 151.

Me 163

The design of a rocket fighter began at the Messerschmitt firm in January 1939 in a special "OT department G", where Professor A. Lippisch and his employees moved from DFS. Initially, the development went under the designation Li R.01, but when at the end of 1940 they built

the first prototype, W. Messerschmitt, made sure that the RLM assigned him the designation Me 163 \ 1.

Me 163M1, the prototype of which was the DFS 194, was equipped with a more powerful LRE V P-203V with a thrust of 750 kgf. The landing gear was the same as that of the DFS 194, i.e., takeoff was carried out on a two-wheeled trolley that was dropped, and landing was carried out on a retractable ventral cradle, in the rear fuselage there was a small supporting ski retractable in flight.

In the spring of 1941, flight tests of the Me 163V1 without an engine began. The experimental aircraft, piloted by H. Deet-TMap, took to the air with the help of a towing aircraft and, after uncoupling, made a gliding flight, developing a maximum dive speed. Based on the test results, the automatic slats replaced the profiled

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bath slits in the toe of the circle, tightening the stall into a tailspin, and to reduce the length of the run, landing flaps were installed. W

The first flight of the Me 163M1 with the engine took place on July 13, 1941. In the course of further tests, a speed of 885 km/h was reached, but it was not possible to achieve a higher speed during takeoff from the ground due to the small amount of fuel. During the tests on October 2, the towing aircraft raised the car, fully fueled, to an altitude of about 4000 m. After uncoupling from the tug and turning on the engine, H. Dittmar managed to reach a speed of 1004 km/h, which was slightly higher than the calculated speed.

In connection with the appearance of more powerful LRE K P-211 with a thrust of 1700 kgf, the interest of the RLM in the interceptor increased again, it was decided to stop further work on the A-series aircraft and start developing the Me 163V Kote (Komet). Its prototype was the third prototype Me 163V3, assembled in April 1942. It had a constant sweep wing along the leading edge with a span increased to 9.3 m, a longer fuselage with a pointed nose. A fairing was installed under the fuselage, where the landing ski and a small tail wheel strut were removed. The NUK 509A-1 rocket engine with a thrust of 1500 kgf was used as an engine, but as a result it was replaced by an HWK 509A-2 engine with a thrust of 1700 kgf.

The rocket engine operated on two-component fuel - T-Stof (80% hydrogen peroxide with the addition of a stabilizer) and C-Stoff (a mixture of 30% hydrazine hydrate with methanol). The capacity of aircraft tanks was increased, two MK 108 cannons were installed in the root part of the wing (in serial production, a number of aircraft were produced with MC 151 cannons) and armor protection of the cockpit. Flight tests of the Me 163V3 began in August 1942. At the beginning of the next year, a pre-production batch of Me 163B-0 entered the 16th test team E.Kdo 16, based in Peenemünde. This team was engaged in the development of tactics for the combat use of missile fighters and the training of flight personnel for them.

In the summer of 1943, the Messerschmitt company, due to the massive Allied air strikes on the plants in Regensburg and Augsburg, experienced an acute shortage of production capacities necessary for the manufacture of the Me 262 fighter.

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Therefore, mass production of the Me 163 was transferred to the Klemm company, which carried out the final assembly at a plant in the Black Forest from ready-made units and assemblies obtained from small factories and workshops dispersed throughout Germany. |

In July 1944, squadron 1./JG 400 began to be equipped with serial Me 163B-1a aircraft, the core of the squadron was pilots from E.Kdo 16. The task of the squadron was to cover important industrial facilities from allied air raids. On July 28, 1944, eight American P-51D fighters from the 359th Fighter Group, covering B-17 bombers, collided for the first time with five Me 163 interceptors from 1./JG 400. In August, two squadrons

of the first group, 1./7C 400 and 2./JG 400 were assembled together at the Brandis airfield near Leipzig, each of them had 15 aircraft. In December 1944, a second group of P / J S 400 was formed in Stargard.

Despite the fact that Lippisch left the Messerschmitt firm in the spring of 1943, the RLM retained three of his control functions in the Me 163 program. By the end of 1944, Messerschmitt built three experimental Me 163Cs. These machines differed from the B series in a slightly enlarged fuselage, a pressurized cabin with a more streamlined canopy, and a two-chamber NUK 509S-1 rocket engine. However, this project did not go into the series.

In the same year, a project was developed. Me 1630. The machine had a new, more elongated fuselage, a three-wheeled retractable landing gear, a teardrop-shaped canopy protruding above the fuselage, increased fuel tank capacities and a two-chamber NUK 509S-1 rocket engine. The first prototype of this series was built in the late spring of 1944 and passed flight tests in a non-powered version. However, RLM, believing that the Messerschmitt company, due to being busy with other programs, would not have time to bring this project to mass production in time, transferred the Me 1630 project to the Junkers company.

After some constructive refinement in August 1944, a prototype aircraft was built at the Junkers plant in Dessau, which received the designation Ju 248M1 in KEM. The results of flight tests with the NUK 509S-1 engine showed that the machine is superior to the Me 163V in all respects. At the end of December, the RLM decided to urgently start serial

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production of Ju 248. However, V. Messerschmitt achieved a change in the designation of the Ha Me 263A aircraft, arguing that the main technical solutions implemented in it were obtained at the Messerschmitt company. By the end of the war, not a single production Me 263A was built.

At the end of 1944, the Me 1635 training glider was developed, in which a second instructor's cabin was installed instead of the T-510y tank. Training flights were carried out in tow, while the remaining tanks were filled with water to maintain balance.

Serial production of the Me 163B continued until February 1945, by that time 237 machines had been built, but only 42 aircraft had been delivered to the troops. On the basis of combat use showed that the Me 163B is dangerous in operation for flight and ground personnel due to the extreme toxicity and explosiveness of the fuel, and is extremely ineffective when intercepting. Until the end of the war, only 11 successful attacks were registered.

Characteristics Me 163V-1a: crew - 1 man, power plant - LRE NUK 509A-2 with a thrust of 1700 kgf, wingspan - 9.32 m and its area - 19.6 m² empty - 1980 kg, take-off weight - 4310 kg, maximum speed - 960 km/h at an altitude of 3000 m, service ceiling - 12,000 m, time to climb 11,000 m - 3.0 min, flight duration with engine running - 10 min - from 8 to 15 minutes, range - up to 100 km, armament - 2 guns MK 108 or MS 151.

Me 210 |

The RLM's technical department expected the Me 210, which first flew on 2 September 1939, to replace the VG110. The new aircraft was supposed to fulfill the tasks of a heavy fighter, reconnaissance aircraft, dive bomber and attack aircraft.

However, the prototype, which had a spaced tail and equipped with OV 601A-1 engines, demonstrated very poor controllability, had longitudinal and transverse instability. The optional car was finalized by installing conventional plumage instead of a two-keel plumage,

however, despite the refinement, it crashed during testing. The remaining experimental machines were again modified, but the accident rate during their tests still remained quite high. Only at the end of 1940, several experimental aircraft were delivered to Erprobungsgruppe 210 (E.Gr. 210), which was formed for military testing and refinement of the Me 210 in preparation for the Battle of England.

In the spring of 1941, the assembly of 94 pre-production machines began, the first Me 210A-0 aircraft left the vane-relay assembly line. Me 210A-0, equipped with DB 601F engines, was used as a heavy fighter or dive bomber. Military testing of the Me 210A-0 began in the late autumn of 1941, but according to the results of the tests, the Me 210A-0 aircraft was declared completely unfit for combat use. However, in January 1942, the Luftwaffe received 64 vehicles of the Me 210A-1 version. The Me 210A-2 with DB 601A engines became the main variant for ground attacks; these aircraft entered service with the P/2S 1 group operating on the Soviet-German front. By the middle of 1942, approximately 600 Me 210 aircraft had been built.

In August 1942, the remaining Me 210s were transferred from E.Gr. 210 in 16./KG 6, but the participation of this squadron in the Battle of England was unsuccessful. Two of its aircraft were shot down on the very first flight over the British Isles, and by the end of September the squadron had only three combat-ready Me 210 aircraft. In November 1942, a small number of Me 210A-1 entered Sh / 7.S 1 in Sicily, soon this group was transferred to Tunisia. By March 1943, the PI/46S 1 had been completely re-equipped with the Me 210A-1, with 42 aircraft in service. For some time Me 210-1 were in service with 10./ZG 26 in Tunisia, as well as FA.Gr. 122 and 2.(E)/122 in Sardinia. The production of the Me 210 was finally terminated in June 1943, the total number of aircraft built was 550 copies.

Characteristics of the Me 210A-1: crew - 2 people, power plant - 2 DB 601E engines with a capacity of 1350 liters each. With. (1007 kW), wingspan - 16.35 m and its area - 36.25 m², aircraft length - 12.15 m, height - 4.3 m, empty weight -

7080 kg, maximum takeoff weight - 9715 kg, maximum speed - 560 km/h, service ceiling - 8900 m, range - 1800 km, armament - 2 machine guns MG 17, 2 machine guns MO 131 and 2 guns MC 151.

Me 261

In 1937, by order of the RLM, Messerschmitt began, within the framework of the R.1064 project, the development of a record aircraft for ultra-long non-stop flights. The power plant consisted of two OV 606 engines, the fuselage had a rectangular section, fuel tanks were located in the wing.

The assembly of three experimental machines began in the spring of 1939 at the company's plant in Augsburg, but was suspended in August in connection with preparations for war. Work resumed in the summer of 1940, the first experimental machine Me 261U1 (B / -SR) took off on December 23 of the same year. It was decided to test the second Me 261V2 (BJ+CQ) as a long-range reconnaissance aircraft over the Atlantic; it took off for the first time in the spring of 1941. The third Me 261V3 (BJ+CR), completed in early 1943, was equipped with more powerful OB engines. 610. During flight tests in April, it flew 4473 km in 10 hours. During landing, the car received minor damage due to the fact that the landing gear was formed. After repair, the aircraft was sent for military trials to the long-range reconnaissance group FA.Gr.QOb.dL, where it was used to perform combat missions. The first and second experimental machines were badly damaged as a result of an allied air raid in 1944,

after which they went to scrap.

Characteristics of the Me 261V3: crew - 5-7 people, power plant - 2 engines OV 610A with a capacity of 2950 hp each. With. (2200 kW), wingspan - 26.85 m and its area - 76.0 m², aircraft length - 16.7 m, height - 4.7 m, cruising speed - 470 km/h, maximum speed - 615 km / h at an altitude of 3000 m, practical ceiling - 8300 m, range - 10,000 km.

Me 262

In the autumn of 1938, a program was announced to develop the first front-line fighter with turbojet engines. The technical requirements were

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the maximum speed of the aircraft is 850 km/h and the flight duration is one hour. The firms Messerschmitt (Me 262) and Heinkel (Not 280) took part in the competition.

The Messerschmitt firm, as a result of studying various layout options (single- or twin-engine aircraft), settled on the P.1065 project. In the summer of 1939, an application was sent to B RLM for the development of a twin-engine peak-powered fighter. | March of the following year, RLM representatives inspected a wooden model of the aircraft, after which the company was given a contract for the manufacture of three prototypes of the aircraft, which received the designation Me 262. At the beginning of 1941, the machines were ready, but there were no turbojet engines for them. Therefore, it was decided to equip the first Me 262V1 with a Jumo 210G piston engine; this aircraft first took to the air on April 18, 1941. Ero competitor He 280, equipped with two HeS 6 turbojet engines, made its first flight on April 2 of the same year. The first flight of the Me 262V3 aircraft with two Jumo 004 turbojet engines took place in March 1942.

The official decision to start mass production of the Me 262 was made in June 1943, however, due to the increasing frequency of allied air raids, mass production began only in 1944. located in the forward fuselage with four MK 108 cannons with 360 rounds of ammunition. The weight of the total second salvo was 12.8 kg, which was almost twice as much as for propeller-driven fighters of those years.

Following the bomber, the Me 262A-2a "Sturmvogel" ("Petrel") bomber variant was launched into the series, which, in addition to two guns, had pylons on which one 1000-kg bomb, two 500-kg or two 250-kg bombs could be hung. Bombing was carried out from low altitudes and from a dive using a Revi 16V sight and a TSA device that took into account altitude, speed and drift angle.

The first unit equipped with Me 262 aircraft was the E.Kdo 262 team, created in April 1944 in Lechfeld. The first English Mosquito aircraft was shot down by Lieutenant Schrieber on July 26, two Americans were soon shot down.

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Rican photo reconnaissance F-5. In August, an experimental bomber team "Kdo Schenk" was formed to carry out missions in the northern regions of France; this unit was armed with Me 262A-2a.

In October 1944, Me 262A-1a fighters were equipped with two squadrons of the Kdo Nowotny unit formed on the basis of E.Kdo 262, whose main task was to fight British and American bombers. The air defense of Berlin at the end of the war was led by the Kao Welter night fighter unit, which was armed with Me 262V-1a vehicles. Tactical reconnaissance units Sonderkommando Braunegg and NA.Gr 6 were armed with Me 262A-1a/03 and Me 262A-5a modifications. Squadrons equipped with A-series vehicles were part of KS 6, KG 27, KO 54 and Jagdverband 44.

It was proposed to upgrade the training version of the Me 262B-1a into a night fighter, installing a radar and appropriate radio equipment on it. The final version of the Me 262B-2a night fighter received a longer fuselage for the installation of an additional fuel tank with a capacity of 910 l, and a pair of MK 108 cannons for upward firing was also added. Until the end of the war, only two experimental Me 262B-2a machines were built - the first experimental machine was undergoing flight tests, and the second, which had a radar, was just being prepared for summer trials.

The experimental unit "Kdo Stamp", created on the basis of /Ja 300, was armed with 10 Me 262B-1a4/1 night fighters. The same fighters were in service with the Kdo Welter, which defended the skies over Berlin in March-April 1945. The commander of this unit, K. Welter, is believed to have shot down about 20 Allied aircraft in Ha Me 262 night sorties in the last two months of the war. On April 4, 1945, Major G. Ehrlich of JG 7, formed on the basis of Kdo Nowotny, shot down two American B-17 bombers in a Me 262 fighter, repelling an American air raid. He rammed the third bomber, but he himself died in the process. This was the first ram in the world, carried out by a jet fighter.

Until the end of the war, Messerschmitt worked on projects for numerous variants of the Me 262, including:

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Me 262C-1a - interceptor with an additional NUK 509A-2 rocket engine in the rear fuselage,

Me 262C-2b - interceptor with BMW 003R engines (combination of BMW 003 turbojet engine and BMW 718 rocket engine),

Me 262HG - high-speed fighter with a large swept wing and two engines recessed into the wing (BMW 003 for Me 262HG I, HeS 011 for Me 262HG Pi Jumo 004B for Me 262HGIII),

Me 262 "Ash ageg" (I, Tai P) - reconnaissance variants with Jumo 004B engines,

Me 262 "Schnellbomber" (I, Ia and P) - a high-speed bomber, the Gi Ta variants were a modification of the previous version with a suspension of bombs under the front of the fuselage, the B variant had an increased fuselage volume with a bomb bay,

Me 262 "Lorin" - with additional ramjet engines above main engines.

In total, over 1,400 Me 262 aircraft were launched during the war years. A large number of these aircraft fell into the hands of the Allies as trophies and were subjected to careful study. After the end of the war, Me 262 aircraft were produced in Czechoslovakia under the designations "Avia" 5-92 (single-seat fighter) and "Avia" CS-92 (two-seat trainer aircraft) for the national Air Force.

Characteristics of the Me 262A-1a: crew - 1 person, power plant - 2 turbojet engines Lito 004V-4 with a thrust of 900 kgf, wingspan - 12.5 m and its area - 21.68 m², aircraft length - 10, 61 m, height - 3.83 m, empty weight - 4000 kg, takeoff weight - 6775 kg, maximum speed - 870 km / h at an altitude of 7000 m, rate of climb near the ground - 1200 m / min, range - 845 km, service ceiling —11,000 m, armament — 4 guns MK 108.

Me 321

As part of preparations for the invasion of England, the Messerschmitt firm developed in 1940 the giant Me 321 glider for transporting armored vehicles and paratrooper units. The machine was made entirely of wood, loading of the fuselage was carried out through the bow

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Part. The takeoff of the glider was to be carried out on a drop cart, landing was carried out on skis. The glider was lifted into the air by a He 1117 aircraft or a trio of Bf 110 aircraft. To facilitate takeoff, gliders were often equipped with launch boosters.

The first flight took place in March 1941, serial gliders Me 321A and Me 321 B, which had a wheeled chassis, entered service in June of the same year in specially formed squadrons of heavy gliders that operated on the Soviet-German front - B Baltic, Belarus and Ukraine. Me 321 carried out the supply of German aviation and ground forces, transporting ammunition, fuel and personnel. The experience of operating gliders has shown that the supply of advanced units requires the use of transport vehicles capable of independently taking off. Therefore, it was proposed to consider the possibility of equipping the Me 321 with engines.

An order for the construction of 200 gliders was completed in early 1942. At the same time, Me 321s began to be withdrawn from the Soviet-German front in the Mediterranean to prepare for a landing on Malta. In this operation, Me 321, together with tugs He 1117, were supposed to deliver heavy equipment and ground forces to the island, but this operation did not take place. In 1943, part of the Me 321 gliders was used from airfields in the Crimea to supply German troops in the Kuban. The remaining gliders were transferred to France, where they began to prepare for the transfer of parachute divisions to Sicily, but the operation was soon canceled.

Characteristics of the Me 321V-1: crew - 1 person, wing span - 55.0 m and its area - 300.0 m², airframe length - 28.2 m, height - 10.2 m, empty weight - 12,400 kg, maximum takeoff weight — 39,500 kg, maximum speed — 160 km/h, glide speed — 140 km/h, armament — 2 MG 15 machine guns.

Me 323

The Me 321 glider became the prototype for the heavy transport aircraft Me 323 "Gigant" ("Giant"). The first flight of the aircraft, designated Me 323C and equipped

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powered by four Opel-Kdpe 14N engines, took place in 1941, the take-off was carried out with the help of a trio of Bf 110 tugs.

The delivery of serial Me 323D aircraft equipped with six engines began in May 1942. In October 1942, Me 323D aircraft armed a specially formed K.Gr.zbV 323 transport squadron, which began operating in the Mediterranean in November. In April, this unit was renamed the transport squadron TG 5, but two weeks later the squadron had practically no combat-ready aircraft left. After being replenished with new aircraft, TG 5 was transferred to the Eastern Front in November.

Fine-tuning of the basic design continued, and soon the Me 323E with reinforced armament began to roll off the assembly lines. Variants of the Me 323F and Me 323G were also developed. Production of the Me 323 was discontinued in March 1944, with a total of 198 aircraft delivered to the Luftwaffe.

Characteristics of the Me 323D-6: crew - 5 people, power plant - 6 Opel-Kdpe 14N engines with a power of 1140 hp each. With. (850 kW), wing span - 55.0 m, its area - 300 m², aircraft length - 28.2 m, height - 10.2 m, empty weight - 27,330 kg, takeoff weight - 43,000 kg, maximum speed - 285 km/h near the ground, range - 1100 km, practical ceiling - 4000 m, armament - 5 MG 15 machine guns in the bow and up to 10 MG 34 infantry machine guns in the side windows.

Me 410

In 1943, KEM decided to create a modified aircraft based on the Me 210. The new fighter-bomber, designated the Me 410 Hornisse (Hornet), actually differed from its predecessor only in more powerful engines and a new tail - Sturmfelge. The first Me 410A machines were armed with 5./KG 2 in Lechfeld, as well as 2. (E) / 122 and Sh / 7S I in the Mediterranean. In June 1943 Me 410A were delivered to BI/KG 51, where they were used in the night bombing of England, and then during the Allied landings in Normandy. The total number of issued Me 410 was 1160 copies.

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Characteristics of Me 410A-1: crew - 2 people, power plant - 2 DB 603A engines with a capacity of 1750 liters each. With. (1305 kW), wingspan - 16.35 m and its area - 36.25 m², length of the aircraft - 12.41 m, height - 4.3 m, empty weight - 6050 kg, maximum take-off weight - 10 530 kg, maximum speed — 638 km/h at an altitude of 6700 m, range — 1480 km, service ceiling — 4000 m, time to climb 6700 m — 10.7 min, armament — 2 machine guns MG 131, 2 machine guns MG 17, 2 MG 151 guns and 2 bombs weighing 1000 kg each or 10 bombs weighing 50 kg each.

Me R.1101

Since the beginning of 1944, the company has been working on a series of projects, united under the designation R.1101. These were projects of high-speed swept-wing aircraft, including a variable-sweep wing.

Among the large number of variants of the project was the R.1101/92 heavy fighter and attack aircraft equipped with a 75 mm gun. The crew of R.1101/92 consisted of two people, placed side by side in the cockpit. The wing had a sweep of 40°, under each console - the HeS 011 engine, the tail unit - of the HeS type. Project R.1101/99, dated June 6, 1944, was a two-seat attack aircraft with four HeS 011 engines, located in pairs in the wing root on both sides of the fuselage. The armament consisted of one 75-mm Pak 40 anti-tank gun and five 55-mm MK 112 guns. However, the R.1101/92 and R.1101/99 projects never left the initial development stage. Problems with the development and organization of production of HeS 011 engines forced a move to the development of single-engine fighters.

The next project of a single-seat high-altitude fighter was developed in four versions. The first variant, the Me P.1101/I, completed in July 1944, had a double swept wing along the leading edge and a butterfly-type tail. The HeS 011 engine was located under the fuselage, two round air intakes were located at the edges of the cockpit. Two MK 108 guns were installed in the forward fuselage. The aircraft could carry one SC 500 bomb.

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R.1101/P, developed in August, differed from the previous version in a more elongated fuselage and a constant sweep over the entire wing span. Behind the cab, above the engine, there were two sealed fuel tanks. In addition, suspension units for drop tanks were provided, as well as an attachment point for an additional winged tank towed in flight. The wing had a sweep of 40°, a U-shaped tail unit was provided. The armament consisted of one MK 112 cannon or two MK 108 cannons with the possibility of installing an additional MK 103 or MK 108. To combat allied bombers, the SG 500 Jagdfaust rocket launcher was considered as an option. Installed in the nose, two SG 500s were tubes from which 55-mm unguided rockets were fired upwards. The aircraft could carry one SC 500 bomb under the fuselage.

Me 1101/1 (also designated Me P.1101L) differed from previous versions by installing a ramjet engine and shorter landing gear. The takeoff was to be carried out with the help of eight solid-fuel launch boosters with a thrust of 1000 kgf each, after which the ramjet engine was put into operation. |

Me 1101/1, developed in November, was planned as a prototype for flight tests. Since it was supposed to study the influence of the wing sweep angle on the aerodynamic characteristics of the aircraft, the attachment point of the consoles to the center section was designed in such a way that the desired sweep (35°, 40° or 45°) could be easily set on the ground before the flight.

Preparation for the production of Me P.1101 began on December 4, 1944 at the company's plant in Oberramergau in the mountains of Bavaria in southern Germany. This Messerschmitt aviation complex was unknown to the Allies, so it was not subjected to massive bombardment until the end of the war. In parallel with the preparation of production, the design documentation was being finalized. The fuselage of the aircraft was made of duraluminum, wing and tail were made of wood. On the experimental machine, instead of the He 011 engine, it was supposed to put He 004B.

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On April 29, 1945, the plant was captured by American troops. By that time, the first prototype Me P.1101V1 was 80% built. After the end of the war, the captured aircraft was transported to the United States, it was tested at the Bell company, for which it was equipped with the American J-35 turbojet engine. The test results of the Me P.1101 formed the basis of the X-5 aircraft project developed by Bell.

Characteristics of Me P.1101M1: crew - 1 man, power plant - one HeS-011 turbojet engine with a thrust of 1300 kgf, wingspan - 8.25 m and its area - 15.85 m², aircraft length - 9.18 m, height - 2.8 m, empty weight - 2600 kg, takeoff weight - 4064 kg, maximum speed - 975 km / h at an altitude of 7000 m, rate of climb near the ground - 22.2 m / s, service ceiling - 12,000 m, range - 1500 km, armament - 2 guns MK 108.

"Fieseler"

Gerhard Fieseler was a famous German aviator who scored more than two dozen victories during the First World War. From May 1926, he began working as an instructor in a flight school at Raab-Katsenstein GmbH, which produced light aircraft. In 1930, Fieseler acquired the glider firm Segel Flugzeugbau Kassel, which in 1932 became known as Fieseler Flugzeugbau. Soon the company built its first biplane aircraft E-2, on which Fieseler won the world championship in aerobatics in 1934. By 1935, the Fieseler company joined the state program for the construction of military aviation and began to license the production of aircraft from other companies. The first licensed aircraft were He 46, He 51 and He 72. In April 1939, the company received a new name "Gerhard Fieseler Werke GmbH"

("Gerhard Fieseler Werke GmbH"). Its main products were the Fi 156, Bf 109 and Fw 190 aircraft, as well as the Fi 103 cruise missile.

E: 1038

The idea of converting a small aircraft into an unmanned flying bomb dates back to the dawn of military aviation. In 1915, the American company "Sperry Gyroscope"

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experimented with "air torpedoes", which used a gyroscope for control. Similar work was carried out in England, in particular with the flying bomb "Larynx", test launches of which from the ship "Stronghold" were carried out in 1927.

The innovation that the Germans applied in the development of their flying bombs was the use of a jet engine. In 1935, P. Schmidt and G. Madelung proposed a flying bomb project to the Luftwaffe. This bomb was unusual for its time: it was proposed to use a pulsed air-jet engine (PUVRD) developed by Schmidt as a power plant. Another feature of the bomb was the location

engine air intake around the circumference in the middle of the bomb body. However, the Luftwaffe rejected the project as "technically questionable and uninteresting from a tactical point of view."

In 1940, P. Schmidt began to cooperate with the Argus engine building company in the framework of a project funded by the Luftwaffe to develop a PUVRD suitable for practical purposes. By the end of the year, a prototype engine was created, in January of the following year it was tested on cars, and in April of the same year on a Co 145 aircraft. , after getting acquainted with the results of the development of the PUVRD, he proposed to develop a flying bomb through the joint efforts of Argus and Fieseler. In March 1942, the RLM adopted a plan for the development of the first cruise missiles, which, in German terminology of the time, were called "Gleitbombe" ("Gliding Bomb").

Three months later, Fieseler was given a contract to build the Fi 103 rocket, which, for reasons of secrecy, was documented as the FZG 76 (Flakzielgerät 76) anti-aircraft missile. In December 1942, tests of the non-powered prototype Fi 103, towed behind the Fw 200 aircraft, began at the Peenemünde rocket center. This was followed by flight tests of a prototype rocket with an As 014 ramjet, just developed by Argus Motoren. On May 26, 1943, the Peenemünde missile center was visited by the highest Nazi leadership, who were shown the Fi 103. After that, it was decided to deploy a full

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large-scale production of cruise missiles, the construction of hundreds of launch sites on the northern coast of France, capable of launching thousands of missiles a day, and the training of maintenance personnel.

The start of mass production of the Fi 103 was planned for September 1943, but due to the increasing frequency of allied air raids, it was launched only in March of the following year. At the Fieseler company itself, only a small part of the order was fulfilled due to the fact that most of the production capacity was occupied by the production of the Fw 190 aircraft. The main production took place at the Volkswagen company in Fallersleben and Schönbeck and at the Mittelwerke plant in Nordhausen.

At the end of 1943, a special unit 155 (MU) was formed, which was supposed to be armed with ground-based Fi 103. The combat launch of the first ten missiles on targets in England took place at dawn on June 13, 1944, the launch was carried out from ground launchers. By June 29, the number of rockets launched from catapults reached 2000, and the first combat launch of a rocket from a He 111 carrier aircraft took place on July 7.

German propaganda immediately gave the name "weapon of retaliation" to cruise missiles. ("Vergeltungswaffe"), or abbreviated Vj ("V-1"). However, the experience of combat use of the V1 revealed the low effectiveness of this weapon, as evidenced by the following data. Until the end of the war, 10,492 missiles were fired at targets in England, of which 3,004 exploded at the start, 232 were destroyed when they collided with the obstacles, 1,878 were shot down by anti-aircraft artillery and 1,847 were destroyed by air defense fighters. That is, about 30% of the missiles were lost due to design and technological flaws, and almost 38% due to the fact that the autopilot-controlled missile in cruise mode was a non-maneuverable target that could not even evade a collision with an azostat obstacle. Some English fighter pilots even managed to turn over a flying rocket by prying its tip around with the plane of their aircraft, after which the rocket, having lost stability, went into a tailspin and fell to the ground.

Convinced of the low efficiency of the Fi 103 unmanned aerial vehicles, the German high command turned to K

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the idea of using manned projectiles against ships and well-protected ground targets on enemy territory. This idea was borrowed from the Japanese, who

aviation detachments of suicide pilots (kamikaze) were officially formed from the end of 1943. However, unlike the Japanese kamikaze pilot, the German pilot was ordered to leave the cockpit of the aircraft with a parachute after pointing the car at the target. Moreover, the technical requirements of the RLM for the development of a manned projectile aircraft contained clauses on the obligatory armoring of the cockpit and equipping it with means of quick escape, among which an ejection seat was also considered. At the same time, it was assumed that after splashdown or landing, the pilot would be picked up by special rescue squadrons armed with Fi 156 light aircraft. to land (or splash down) was rated by many German experts as one in a hundred. Nevertheless, zealous supporters of this idea were the famous test pilot Hanna Reitsch and Germany's "saboteur Ho 1" SS Hauptsturmführer Otto Skorzeny.

In the autumn of 1943, Luftwaffe officer Hauptmann Heinrich Lange led a small group of volunteer pilots to practice the technique of using "non-standard" attacks on enemy ground and surface targets, including attacks with the help of manned projectiles. In October 1943, H. Lange met with H. Reitsch and Dr. Benzinger, head of the German Institute for Aviation Medicine. They developed specific proposals for the use of manned projectiles, which they then discussed with Deputy G. Goering S. Milch. Hanna Reitsch was instructed to present the final version of the proposals personally to A. Hitler, which was done on February 28 of the following year. The result of the consideration of these proposals was an order to develop work on the study of "non-standard" methods of attack, after which an experimental squadron 5./KG 200 was created as part of the 200th bomber squadron.

This squadron had the unofficial name "Leonidas Staffel", which was reminiscent of the Spartan hero Thermopylae.

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King Leonidas, who died together with his detachment of 300 people in the battle with the many thousands of troops of the Persian king Xerxes. X. Lyange was appointed commander of the squadron. The flight crew of 5./KG 200 consisted of about 70 people, 30 of which were members of O. Skorzeny's team. The leadership of all work related to the formation of groups of suicide pilots and their development of attack methods was entrusted to the Chief of the General Staff of the Luftwaffe, General Korten.

The high command of the Luftwaffe initially considered the Me 328 aircraft developed by Messerschmitt for the role of a manned projectile aircraft. However, tests have shown that it is difficult for an overloaded Fw 190 to break through the air defense barriers of guarded objects. Therefore, we decided to urgently develop a specialized small disposable fighter with a warhead (projectile aircraft) launched from a carrier aircraft in the air or from a ground catapult. Projects for disposable aircraft were developed by several companies, but DFS was chosen for the final implementation.

At DFS, on the instructions of the RLM, they developed a project for the Reichenberg manned projectile based on the Fi 103 cruise missile. In total, four variants of the aircraft were developed: the first three were intended for testing and training of flight personnel, the fourth for combat use. The Reichenberg-GU was supposed to be delivered to the combat zone under the wing of the He 111 carrier.

"Reichenberg-GU" differed from Fi 103 only by installing the cockpit in front of the engine air intake (instead of the compartment with compressed air cylinders) and the presence of ailerons on the wing. The cockpit was equipped with a pilot's seat, a dashboard with a sight, altimeter, attitude indicator, speed indicator and clock. In addition, the cockpit housed a gyrocompass and an electric

battery with converter. The aircraft was controlled using a conventional handle and pedals. The cockpit canopy opened to the right, the windshield was armored. |

The first prototypes of Reichenberg-GU did not have a pilot rescue system. On serial machines,

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It was supposed to install the simplest emergency escape system, similar to the system used on the OV R.E projectile, the Ta 154 fighter or on the Henschel Hs 132 jet attack aircraft. the pilot fell out of the cockpit.

The Reichenberg prototype was manufactured at the Henschel plant in Berlin Schoenefeld. Flight tests of the machine began in Rechlin in September 1944. During the first flight, the pilot received serious back injuries due to the high speed of landing on the ventral lie. During the second flight, the lantern was torn off, and again the pilot was seriously injured during the landing. After finalizing the design of the machine, the tests continued, several flights were performed by Willy Fiedler, a test pilot of the Fieseler company. Hanna Reitsch, who tested the third experimental machine, completed the first flight successfully, despite the damage received by the machine during uncoupling from the carrier aircraft. However, the second flight of the same machine ended in an accident due to the loss of sand ballast: the plane crashed, but H. Reitsch survived.

Soon a two-seat training model without the Reichenberg-P engine was built, and in November, a two-seat arl-parat with the Reichenberg-Nb engine. During the second test flight of the Reichenberg-Sh on November 5, 1944, the tip of the left wing console broke off due to strong vibration from the engine, but test pilot Heinz Kensche managed to leave the cramped cockpit with a parachute. This accident demonstrated the enormous difficulty of leaving the vehicle, even for a highly skilled test pilot.

At the end of 1944, the training of instructors for training flight crews to fly the Reichenberge-ÿM began, and production facilities were prepared near Dannenberg for converting the Fi 103 into manned Reichenbergs. As already mentioned, the Reichenbergs were destined for the Leonidas Staffel of the KG 200 squadron. Of the 70 volunteer pilots, about half completed training until the end of February 1945, but then the training was suspended due to lack of fuel. During a test flight in Rechlin on March 5, test pilot Kenshe's luck turned away - he

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died after the skin was torn off the wing of the Reichenberg during a dive.

This catastrophe broke the patience of the commander of KG 200, Lieutenant Colonel Baumbach, who was an opponent of the Reichenberg program. Baumbach turned to Minister of Armaments and War Industry Albert Speer for help. On March 15, Speer and Baumbach visited Hitler, and Speer was able to convince the Führer that suicide was not in the tradition of the German military. In the end, Hitler agreed with these arguments, and on the same day Baumbach ordered the suicide squadron to be disbanded. By that time, more than 200 Reichenberg projectiles were already in the Luftwaffe warehouses in Dannenberg and Pulverhof, but not one of them was ever used in the 60s.

The plant in Dannenberg was visited several times by Japanese officers in order to get acquainted with the process of building the Reichenberg. German technological assistance was provided in the development of the Japanese analogue of the Reichenberg, the Kawanishi Baika kamikaze aircraft, which was not completed until the end of the war.

Characteristics of the projectile Fi 103R ("Reichenberg-GU"): crew - 1 man, power plant - 1 pulsed WJE As 014 with a thrust of 300 kgf, wingspan - 5.7 m, aircraft length - 8.0 m, takeoff weight - 2250 kg, warhead weight - 850 kg, maximum speed - 800 km/h, flight range (at drop from a height of 2500 m) - 330 km, flight duration - 32 min.

Fi 156

In 1935, Fieseler began developing a light aircraft Fi 156 "Storch" ("Stork"), which could be used for both civilian and military purposes. The first flight of the prototype took place at the beginning of 1936, a year later 10 machines of the pre-production batch of Fi 156A-0 began testing and demonstration flights. From the beginning of 1938, it was planned to launch a civilian version of the Fi 156B-1, but instead of it, the company began production of a military version of the Fi 156C, armed with one MO 15 machine gun. At the end of 1938

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Pre-production aircraft Fi 156-0 appeared, and at the beginning of the next year, production aircraft Fi 156-1 and Fi 156-2 began to roll off the assembly line of the plant in Kassel. The crew of the aircraft consisted of two people, Fi 156-1 was intended as a staff and liaison aircraft, and Fi 156-2, equipped with a camera, as a short-range reconnaissance aircraft.

In the summer of 1940, the Fi 156 became widely used as an ambulance and rescue aircraft. With the creation of special squadrons to rescue the crews of downed German aircraft, it was used for these purposes until the end of the war. Since 1941, Fi 156C-3 and Fi 156C-5 began to roll off the assembly lines. The Fi 156-3 aircraft, equipped with the As 10 engine, was intended for short-range reconnaissance, communications, evacuation of the wounded and rescue of pilots of downed aircraft. The Fi 156C-5 variant was equipped with the same engine, the HO could carry a container with photographic equipment or an additional fuel tank on an external sling, which made it possible to increase the flight range up to 1000 km. The C-3 and C-5 versions equipped with dust filters were widely used in the Mediterranean and North Africa.

Due to its ability to operate from unprepared HblX sites of small size, the Fi 156 was used in some German special operations. The most famous of them were the rescue on September 12, 1943 of B. Mussolini, who was under arrest in a mountain hotel, and the take-off of H. Reitsch among the ruins of Berlin on April 26, 1945, who took out Colonel General R. von Greim appointed by Hitler as the new commander-in-chief of the Luftwaffe. The total number of Fi 156 aircraft produced before the end of the war was 2549 copies. Small batches of machines were delivered to Finland, Switzerland, Bulgaria, Croatia, Hungary, Romania and Slovakia.

Characteristics Fi 156C-2: crew - 2 people, power plant - 1 As 10-C3 engine with 240 hp. With. (179 kW), wing span - 14.25 m and its area - 25.2 m², aircraft length - 9.9 m, height - 3.05 m, empty weight - 930 kg, maximum takeoff weight - 1325 kg, maximum speed - 175 km/h, cruising speed - 150 km/h, climb time to a height of 1000 m - 4.1 min, service ceiling - 4600 m, armament - 1 MO 15 machine gun.

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Fi 167

In 1937, the technical department of the RLM issued the Arado and Fieseler firms with the task of building a prototype of a multi-purpose carrier-based aircraft, which was intended for the Graf Zeppelin aircraft carrier under construction. Fieseler developed a project for a two-seat Fi 167 aircraft in the variants of a torpedo bomber and a reconnaissance aircraft. The aircraft was a biplane with rear-folding wing panels, equipped with an OV 6018 engine.

In the summer of 1938, tests of the first experimental machine were carried out, which revealed the advantages of the Fi 167 over the competitor Ar 195. After that, the RLM issued a contract to Fieseler to build an initial batch of Fi 167A-0. Despite the fact that in May 1940 a decision was made

on the suspension of work on the aircraft carrier, all twelve aircraft of this batch were accepted for military trials. An experimental squadron 167 was formed to test the Fi 167-0 in combat conditions in Holland. At the beginning of 1943, the squadron was disbanded due to the fact that the Fi 87E was considered for the role of a carrier-based aircraft. Part of the aircraft E! 167A-0 was returned to the company for overhaul, and several cars were sold to Romania.

Characteristics of Fi 167A-0: crew - 2 people, power plant - 1 engine OB 6018 with a capacity of 1100 hp. With. (820 kW), wingspan - 13.5 m and their area - 44.0 m, aircraft length - 11.4 m, height - 4.8 m, empty weight - 2800 kg, maximum takeoff weight - 4853 kg, maximum speed - height - 323 km/h, cruising speed - 270 km/h, service ceiling - 8200 m, flight range - 1290 km, armament - | machine gun MO 17, | MG 15 machine gun and one 765 kg LTF5b torpedo or one SD 1000 bomb.

"Flettner"

Anthony Flettner began working for Zeppelin in 1905. In 1930 he built a helicopter with a two-blade propeller, which was rotated by two Anzani engines with small propellers mounted on the ends of the blades. In 1936, an experimental model was tested

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the prototype of the two-seater E 184 autogyro, intended for the fleet as a reconnaissance and anti-submarine vehicle, the next was the prototype autogyro FI 185. Later, light helicopters with crossed propellers FI 265 and Fi 282 were developed; as well as an E 339 helicopter capable of carrying 20 people.

FI 282

In July 1940, Flettner completed the project of a two-seat reconnaissance helicopter KI 282 Kolibri, made according to the scheme with two intersecting propellers. Engine VMM-"Vgato" Sh 14A with a capacity of 160 liters. With. located in the middle part of the fuselage, the power frame of which was welded from steel pipes. The skin was mainly fabric, except for the engine area, where aluminum alloys were used. The chassis was made tricycle with a steerable nose wheel. The production of 30 experimental and 15 pre-series machines was organized at the company's main plant in Johannishthal (a suburb of Berlin) and in Bad Tolz.

Test flights began in 1941, and as early as the beginning of the next year, the fifth prototype Fi 282V5 was used to practice take-off and landing on a 4 x 4 m platform of the cruiser Cologne. In October of the same year, two helicopters were delivered to Trieste for military trials. From November 1942 to February 1943, the sixth experimental vehicle (code GF+YF) was used for reconnaissance in the Aegean Sea, based on the Drache mine layer adapted as a helicopter carrier. Another helicopter (code CJ + SC) was on the shore as a backup pa3 scout. By 1943, about twenty H 282s were completed: the first two cars had closed cabins and were. designation FI 282-1, the rest of the machines had open cabs and were designated FI 282-1. |

In the Mediterranean, Aegean and Baltic Seas, helicopters were used to protect convoys. [1] 282 was also used to search for enemy submarines, after detecting a boat, it called in anti-submarine aircraft to attack. In 1944, an independent artillery unit was created

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spotters, which included three E1 282 and three Ba 223. At the end of February 1945 observation helicopters E! 282 were able to determine in time the beginning of the Soviet offensive in Pomerania. However, the Wehrmacht units that received this message were no longer in

able to stop the further advance of the Soviet troops. Several EI 282s were deployed in the suburbs of Berlin and worked as artillery spotters. Gradually they were all destroyed by Soviet fighters and Soviet anti-aircraft artillery. Despite the fact that the company was ordered 1000 copies of the EI 282, only 24 machines were built before the end of the war. After the end of the war, the allies captured three helicopters in flying condition: two of them went to the USA, and one to the USSR (for a number of years it was used as a training aid in MAY).

Characteristics of ÿ 2828: crew - 2 people, power plant - | Sh 14A engine with a capacity of 160 liters. With. (119 kW), fuselage length - 6.6 m, height - 2.2 m, propeller diameter - 12.0 m, number of propeller blades - 2, Bec of an empty helicopter - 760 kg, maximum takeoff Bec - 1000 kg, maximum speed - 150 km/h, dynamic ceiling - 3300 m, range - 300 km (with 1 pilot) and 180 km (with a crew of 2 people).

"Focke-Ahgelis"

Since 1931, Heinrich Focke, one of the founders of the Focke-Wulf firm, has been engaged in research on rotorcraft. Having built the Fw 186 gyroplane and the Fw 61 helicopter in 1936, the following year he left the Focke-Wulf and founded, together with the famous German pilot Gerd Achgelis, a new firm, the Focke-Achgelis Flugzeugbau GmbH, in Geukenkamp near Delmenhorst. Focke Ahgelis developed a series of prototype helicopters, including the Fa 61, which first flew on June 26, 1936. In subsequent years, this experimental machine repeatedly set records for altitude, speed and flight range. In 1938, the design of the passenger helicopter Ea 266 began, and in 1942 the gyroplane Ea 225 appeared,

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made on the basis of the DFS 230 airframe. During the war, the company developed a number of original machines, including the Fa 269 vertical take-off fighter with rotary engine nacelles and the Ea 284 flying crane.

Ea 223

In 1940, the Fokke-Ahgelis company developed the Fa 223 "Drache" ("Dragon") transport helicopter, which was a modification of the six-seat civil helicopter Ra 266. The pilot and observer were located in the glazed cockpit in the forward fuselage, behind it was the cargo compartment, which led to the door on the starboard side. In the middle part of the fuselage was the BMW 301R engine, which rotated two propellers mounted on tubular struts with the help of long shafts. The helicopter fuselage was welded from steel pipes and sheathed with fabric, except for the engine area, where the sheathing was made of aluminum alloy. The helicopter was equipped with an electric winch, under the fuselage it was possible to hang an additional 300-liter fuel tank or two 250-kg bombs. There was one MG 15 machine gun in the forward fuselage.

In August 1940, the first flight of the prototype took place. According to the results of flight tests, the company was awarded a contract for the construction of 30 pre-production machines. After 10 machines were built at the company's factory in Bremen, due to increased bombing, production was transferred to Laupheim near Stuttgart, where 7 more machines were built. However, by the fall of 1942, due to very heavy bombing by British aircraft, only two copies of the Fa 223 survived, they were transferred for military trials. During these tests, the helicopter performed quite well, for example, it delivered several 75 mm cannons to the mountain shooters at a position located at an altitude of 2000 m.

By 1944, only eight Fa 223s could be built in Heyenkamp and one more in Berlin. In 1944, two helicopters were stationed in Münster as rescue vehicles that could carry not only crews, but also aircraft components. In one case, the engine of a Ku 190 aircraft, weighing 1284 kg, was moved a distance

32 km. As of April 1945, three Fa 223s were in service with the 40th transport squadron. By the end of the war, one of them was destroyed, and two were captured by American troops as trophies.

Features Fa 223E: crew - 2 people, power plant - | BMW 301R engine with 1000 hp. With. (746 kW), fuselage length - 12.25 m, height - 4.35 m, propeller diameter - 12.0 m, distance between propeller axes - 12.0 m, number of propeller blades - 3, Bec empty - 3175 kg, maximum takeoff Bec - 4315 kg, maximum speed - 175 km/h, cruising speed - 121 km/h, dynamic ceiling - 4880 M, range - 437 km.

Ea 330

In 1942, for conducting reconnaissance and escorting submarines or surface ships, Focke-Achgelis developed the Fa 330 "Bachstelze" ("Wagtail") single-seat autogyro towed on a cable. The design of the ero was extremely simple: a longitudinal tube, reinforced in the front by a truss with a pilot's seat fixed on it, tail unit and a small instrument panel in front, and a vertical tube with a three-blade main rotor and a parachute. The tail unit, made of pipes and sheathed with fabric, consisted of a stabilizer and a keel with a rudder. The propeller blades had a tubular spar, plywood ribs and toe, fabric sheathing. The entire power frame of the apparatus was made of steel.

For takeoff and landing on the deck, steel quick-release skids were provided. In special cases, for example, when operating the apparatus on land, a wheeled chassis could be installed. The control of the apparatus was carried out with the help of a handle and pedals, as well as on an airplane. On the dashboard there were indicators of speed, the number of revolutions of the propeller and an altimeter.

On the submarine, the autogyro was stored disassembled in two vertical cylindrical containers with an inner diameter of 600 mm. The apparatus was assembled before the flight on the launch pad in 7–8 minutes. Before the flight, the pilot manually spun the main rotor
WITH HELP

launcher Tpoca. When the required speed was reached, which was made up of the speed of the submarine and the wind speed, the apparatus took off, unwinding the towing cable from the winch (like a kite). With a towing cable length of 300 m and a flight at a speed of 35 km/h, the autogyro climbed to a height of 100 m, aco at a speed of 80 km/h, by 220 m. At the same time, the horizon was visible at a distance of about 35 and 53 km, respectively.

During the flight, a telephone connection was maintained between the apparatus and the boat. There were three communication points distributed between the pilot, the winch operator and the submarine commander. After the end of the observation, the aircraft was pulled up to the launch pad. If necessary, the apparatus could free itself from the cable during the flight and make a free landing. In case of malfunctions in flight, it was possible to reset the propeller by pressing the emergency lever located above the pilot's head and unhook the cable. After that, the pilot descended together with the aircraft on a parachute, which ensured a safe descent from a minimum height of 40 m. A device was provided on the winch that could cut the cable in the event of an accident.

In total, until the end of the wars, the Weserflugzeugbau company near Bremen built 200 Fa 330 specimens. operating in the Far East. However, in combat use, the gyroplane sometimes caused great inconvenience - the boat could not carry out an emergency dive if the gyroplane was in flight. For this reason, the Fa 330 was unpopular with submariners,

they were used only where the enemy had little anti-submarine forces. Under such conditions, the use of a gyroplane was more useful and safer.

Characteristics of the Fa 330: crew - 1 man, gyroplane length — 4.47 m, height — 1.67 m, main rotor diameter — 7.3 m, empty weight — 75 kg, flight — 175 kg, flight speed range (boat ground speed + wind) - 35 - 80 km / h.

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"Focke-Wulf"

Heinrich Focke and his friend and colleague Georg Wulff started developing light aircraft even before the First World War. They consolidated their cooperation by founding the Focke-Wulf Flugzeugbau AG on January 1, 1924 and starting the production of A-7, A-16, 5-1, etc. aircraft. In 1927, G. Wolf died during a test flight of a new machine. Focke headed the firm until 1931, when it merged with Albatross Flugzeugwerke GmbH. After the merger of the companies, he was relieved of the position of the head, although he remained a member of the board of directors, and Kurt Tank became the technical director of HOBbIM. G. Fokke, meanwhile, devoted all his time to the development of his favorite projects, in particular the experimental HbIM helicopters. Soon he left the Focke-Wulf and founded his new company Focke-Ahgelis.

Under the leadership of K. Tank, the company began production of the Fw 44 and Em 58 aircraft, as well as the development of prototypes of the light HC consumer Fw 157 and the heavy fighter Fw 187, which, however, lost in competitions to the fighters W. Messerschmitt Bf 109 and Bf 110 respectively. Subsequently, the company produced such well-known aircraft as Fw 200, Fw 189 and Fw 190. Since 1943, new developments of the company began to receive the designation "Ta" (Ta 152, Ta 154, etc.).

Fw 44

The Fw 44 Stieglitz trainer aircraft was developed in 1932. The prototype, equipped with a Siemens Sh 14 engine, made its first flight in the summer of the same year. The Stieglitz biplane aircraft was exported to Bolivia, Chile, China, Czechoslovakia, Finland, Romania, Switzerland and Turkey. Under license, the aircraft was built in Argentina, Austria, Brazil. In the Luftwaffe, he was in service as a training aircraft until the end of the war.

Characteristics of the Fw 44C: crew - 2 people, power plant - 1 Siemens Sh 14 A engine with a capacity of 150 hp. With. (112 kW), wingspan - 9.0 m and their area - 20.0 m², length

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on an aircraft - 7.3 m, height - 2.7 m, empty weight - 565 kg, takeoff weight - 870 kg, maximum speed - 185 km / h of land, cruising speed - 172 km / h, range - 675 km, time climb 1000 m - 5.5 min, practical ceiling - 3900 m.

Fw 56

The Fw 56 "Stosser", intended as a fighter and advanced flight training aircraft, first took off in November 1933 with an Az 10C engine. In the summer of 1935, the Fw 56 won the competition against the Ar 78 and He 74, after which it was put into production under the designation Fw 56 \ddot{y} -1. In addition to the Luftwaffe fighter schools, the Fw 56A-1 was exported to Austria and Hungary. In 1938, one of the machines with the code D-IKNI was demonstrated in the USA, piloted by G. Akhgelis. The Fw 56 aircraft was produced until 1940, the total number of produced cars was about 1000 copies. They were used in fighter schools throughout the war and participated in a number of research programs.

Features Fw 56A-1: crew - 1 man, power plant - 1 As 10C engine with a capacity of 240 liters. With. (179 kW), wingspan - 10.5 m and its area - 13.5 m², aircraft length - 7.65 m, height - 2.55 m, empty weight - 670 kg, takeoff weight - 985 kg, maximum speed - 256 km / h at the ground, cruising speed - 243 km / h, service ceiling - 6200 m, climb time 3000 m - 8.3 min, flight range - 370 km, armament - 1 (2) MG 17 machine gun and three 10 kg bombs.

Fw 58

In August 1933, the Focke-Wulf firm received an assignment to develop a multi-purpose training aircraft designed to retrain pilots from single-engine to twin-engine aircraft, as well as to train navigators and radio gunners for bomber and reconnaissance aircraft. The prototype aircraft Fw 58 "Weihe" ("Initiation"), equipped with Argus As 10 engines, first flew on January 18, 1935.

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The second experimental aircraft, which took off on June 12, became the prototype for aircraft versions Fw 58A (general purpose aircraft, training and transport aircraft, armament - 2 MG 15 machine guns) and Yem 58V (communication and ambulance aircraft, armament - 1 machine gun MG 15). The float version of the aircraft received the designation Fw S8BW.

The Fw 58C aircraft outwardly differed from the Fw 58B in the absence of nose glazing. They had radio and navigation equipment designed to train crews in instrument flight. The Fw 58D variant was a light passenger aircraft for transporting 6 passengers, the Yem 58E was a weather reconnaissance and multi-purpose aircraft, and the Fw 58G was an ambulance aircraft.

From the very beginning of the war, Fw 58 aircraft were actively used on all fronts as liaison, ambulance, light transport aircraft and tactical reconnaissance aircraft. In October 1942, they began to be used on the Soviet-German front as night attack aircraft. As part of the 4th Air Fleet, Fw 58s were used to fight partisans in the Carpathians and the Balkans.

The total number of Fw 58 aircraft built exceeds 2,000 and they were sold to Hungary, Romania, Bulgaria and Turkey.

Characteristics of the Fw 58: crew - 2 people, power plant - 2 NM 5080 engines with a capacity of 260 hp each. With. (194 kW), wing span - 21.0 m and its area - 47.0 m², aircraft length - 14.0 m, height - 3.9 m, empty weight - 2200 kg, takeoff weight - 3200 kg, maximum speed — 260 km/h near the ground, cruising speed — 240 km/h, service ceiling — 5400 m, time to climb 1000 m — 3.8 min, range — 800 km.

Fw 189

In February 1937, the RLM issued a specification for a short-range reconnaissance aircraft. In April, the company began the development of the Fw 189 Uhu (Filin) twin-boom aircraft, equipped with two Argus As 410 engines with a capacity of 430 hp each. With. The crew consisted of three people - a pilot, a navigator and a gunner. The first flight of the prototype trainer

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The new version of the Fw 189B took place in July 1938 under the control of K. Tank. In the spring and summer of 1940, three pre-production Em 189B-0s and ten production Fw 189B-1s were delivered to the 9.(H)/LG 2 training squadron. serial Fw 189A-1 machines followed, which included the tropical version Fw 189A-1/Tgor and transport variants Fw 189A-1/U2 (personal aircraft of General Field Marshal Kesselring) and Em 189A-1/U3 (personal plane of General Jeshonnek). In 1942, the Fw 189A-2 version appeared, on which, instead of the twin 7.92 mm MO 812 machine gun,

They introduced the MG 15 machine gun. It was followed by the Fw 189A-3 two-seat trainer, which was produced in small quantities, and the Fw 189A-4 light attack aircraft, which was armed with two MG 151 cannons and two 7.92 mm machine guns and had armor on the lower surface of the fuselage, engines and fuel tanks.

The total number of Fw 189s built was 864, including products from Heinkel, the Aero plant in Prague and SNCASO in Bordeaux-Magnac (France). A small number of EU 189s were supplied to the Slovak and Hungarian Air Forces fighting on the Soviet German front, in addition, at least one Luftwaffe squadron used the Fw 189 in North Africa.

Characteristics of the Fw 189A-1: crew - two people, power plant - two Az 410A 1 engines with a capacity of 465 hp each. With. (347 kW), wingspan - 18.4 m and its area - 38.0 m², aircraft length - 12.03 m, height - 3.1 m, Bec nyc-Toro - 2805 kr, maximum takeoff Bec - 3950 kg, maximum speed - 335 km/h, cruising speed - 315 km/h, service ceiling - 7000 m, flight range - 670 km, armament - two MO 15 machine guns, two MG 17 bullets and four 50- kg bomb.

I eat 190

The development of a single-seat fighter-bomber Fw 190 began in 1937, | On June 1939, a prototype took off for the first time, equipped with a 1550 hp BMW 139 engine. With. Pre-production machines Fw 190A-0

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nyalis in two versions - with a reduced and with an increased wingspan. They were initially equipped with the BMW-801C-O engine, but starting from the third vehicle, the BMW 801C-1 began to be installed, the first two pre-production vehicles were tested in October 1940. The Fw 190A-0 was tested in group II / JG 26, then based in Belgium. The first four aircraft of the A-1 series were delivered in June 1941 to 6./JG 26, the first Fw 190A-1 collided with British Spitfire fighters on September 27, 1941

In July, the Em 190A-2 version began to roll off the assembly line, followed by the Fw 190A-3 version with a BMW 801D-2 and Fw 190A-4 engine with a water-methanol mixture injection into the engine. By April 1942, the JG 2 squadron was armed with 74 aircraft of the A-2 and A-3 versions, and by the end of May and B JG 26 had 89 Fw 190A aircraft. A curious incident occurred on June 23 of the same year: Lieutenant A. Faber, adjutant of Sh / TO 2, during an air battle, did not get his bearings and mistakenly landed his Fw 190A-3 fighter at the English airfield in Pembro. At the beginning of 1943, aircraft versions of the A-Zi A-4 fought on the Western Front as part of JG 2, JG 26 and JG 54. On the Soviet-German front in January 1943, the number of Fw 190 He vehicles in units exceeded 100 instances.

The extended nose version of the Fw 190A-5 included several variants, notably the A-5/U12 with six guns and the A-5/U14 and 015 torpedo bombers. in service with the PO 300 group, which participated in repelling raids by allied bombers on the missile center in Peenemünde. The production of the Fw 190A-7 and Fw 190A-8, which had armor and reinforced armament, began in December 1943, the Em 190A-8/01 bga version was converted into a training

airplane.

The Fw 190B was a pressurized high-altitude fighter powered by a BMW 801 engine, the Fw 190C was a high-altitude fighter powered by a DB 603 engine, and the Em 1900 was a mid-altitude fighter powered by a Jumo 213A engine. Deliveries of the Fw 190D-9 to PI/S 54 began in August 1944, and already in October the 9th and 10th squadrons of this group provided

Covering takeoffs and landings of Me 262 jet fighters from JG 7, vol. K. At these stages of flight, Messerschmitt's aircraft was extremely vulnerable. In total, about 700 machines of the D series were built. |

The latest versions of the Fw 190E and Fw 190F were fighter-bombers capable of carrying up to 1800 kg of bombs. The Fw 190F-8, for example, was used to test the SG 116 and MG HF/15 guns and the Pb-1 Panzerblitz missiles for firing at tanks; they were first used in combat in October 1944 on the Soviet-German front. The Fw 190F-2 version was an attack aircraft with ventral and underwing mounts for bombs and missiles and a reinforced landing gear.

In total, about 11.5 thousand Fw 190 machines of different series were built in 1944, and about 2,700 aircraft in four months of 1945.

Characteristics of the Fw 190A-8: power plant - one BMW 801D engine with a power of 2100 hp. With. (1566 kW), wingspan - 10.5 m, its area - 18.3 m², aircraft length - 8.84 m, height - 3.9 m, empty weight - 3170 kg, maximum takeoff weight - 4900 kg, maximum speed - 654 km / h at an altitude of 6000 m, rate of climb near the ground - 720 m / min, service ceiling - 11,400 m, flight range - 805 km, armament - two 7.92-mm machine guns in the nose and up to four 20-MM guns in the wing.

Fw 200

In the summer of 1936, under the leadership of K. Tank, work began on the four-engine Fw 200 Condor aircraft, which was originally intended for operation on long-range passenger airlines of Lufthansa. In the autumn of the same year, the assembly of three prototype aircraft began, in parallel with this, preparations were underway for the construction of nine pre-production aircraft. The first prototype Fw 200, equipped with Pratt-Whitney C1E-C engines, flew on July 27, 1937. Soon, tests of the second and third prototype aircraft equipped with BMW 132G-1 engines (licensed C1E-C) were carried out, subsequently the third copy of the Fw 200 became A. Hitler's personal aircraft.

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In the spring of 1937, the first pre-production aircraft Fw 200A-01 left the assembly line, and the last of this batch, Fw 200A-09, was delivered to Lufthansa in the summer of 1939. The Fw 200A-02 aircraft was bought by a Danish airline, which since July 1938, she used it for commercial transportation under the designation "Denmark" (tail code OY-DAM), in addition to Torshavn, the Danes also ordered Fw 200A-05, which received the designation "Jutland" (OY-DEM). Fw 200A-07 and Fw 200A-08 were delivered to the Brazilian company Syndicato Condor Limited. The pre-production aircraft made several long-distance flights for promotional purposes. For example, on June 27, 1938, the Fw 200A-04 flew from Berlin to Cairo with an intermediate stop in Thessaloniki, and the first prototype Fw 200V1 on August 10, 1938 flew from Berlin to New York. On November 28, 1938, the same machine started along the route Berlin-Basra-Karachi-Hanoi-Tokyo and reached the Japanese capital after 42 hours and 18 minutes of flight time. On the way back, the car crashed near Manila due to lack of fuel.

In the autumn of 1938, work began on the Fw 200B version, which included two variants: the B-1 with BMW 132D engines with 850 hp each. With. and V-2 with BMW 132H engines with a power of 830 hp each. With. Version B aircraft had an increased takeoff weight compared to the original version. In 1939, Focke-Wulf received an order to supply five Fw 200Bs to Japan and two Fw 200Bs to Finland. However, by the time the work on these aircraft was completed, the war had already begun in Europe, export deliveries were canceled, and some of the built machines arrived at Lufthansa.

At the very beginning of the war, the Germans did not have an aircraft capable of operating against British ships in the Atlantic, so the RLM issued an urgent order to the Focke-Wulf company to refine the Fw 200 as a long-range reconnaissance bomber. The company's designers proposed an upgraded version of the Fw 200C, which was accepted for mass production. IN

In September 1939, 10 pre-series Fw 200C-0s were ordered, while the production of serial C-1 machines was being prepared at the same time. The first Fw 200C-0 converted from Em 2008 was completed in January 1940 and entered K.Gr.zbV 105 to support the second

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German forces were sent to Norway, soon three more vehicles joined him.

At the end of August 1940, rpyнна I/KG 40, which included several Fw 200C 0 vehicles, took part in the night bombing of Liverpool. During August-September 1940, GKS 40 sank allied ships with a total tonnage of 90,000 tons. In March 1941, the Atlantic Air Command was created to coordinate all anti-ship operations (Fliegerfuhrer Atlantik), which included 29 Fw 200s from 1/KS 40.

However, by the summer of the same year, the offensive operations of the Fw 200 were reduced, the reason for this was the increased protection of allied convoys. In particular, ships for escorting sea convoys, converted from merchant ships, appeared in the British fleet. Such vessels, called CAM (Catapult Aircraft Merchantmen), were equipped in the HOCO part with a catapult to launch a fighter. The Sea Hurricane Mk TA (Sea Hurricane) aircraft, or, as they were also called, Hurricats, were used as an escort fighter, which were a modification of the serial Hurricane Mk G (Hurricane) aircraft. The escort fighter took off from the decks of the CAM using a catapult. The negative side of this method was its disposability, since the fighter could not land on the deck (the pilot, after completing the mission, abandoned the fighter, and he himself was selected from the water by rescue teams). The first naval victory was won by the Hurricat fighter on August 2, 1941, when Lieutenant R. Zverett of the 804th Division from the Maplin intercepted and shot down an Fw 200 from 1 / KS 40.

Losses among the Fw 200 continued to grow, so by the autumn of 1941 the machines were transferred to the detection of allied convoys and guidance of submarines on them. By the end of 1941, all three KG 40 groups already had Fw 200s, moreover, a reserve group IV (Erg) / KG 40, formed in Bordeaux as a squadron training unit, was created in its composition. In early April 1942, IKS 40 was transferred to Norway as part of the 5th Air Fleet.

In February 1943, 18 Fw 200s in two squadrons from KS 40 were relocated to Stalino (Donetsk). This unit, called K.Gr.zbV 200,

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the supply of food and ammunition to the German troops surrounded near Stalingrad was sad. In 1943, the Em 200C-8 aircraft appeared, built specifically as carriers of the Hs 293A missiles, and the Fw 200C-3 / U1 and Fw 200C-3 / U2 aircraft, which received the name ȳ- 6. Until the end of the war, the Fw 200 was in service with two transport squadrons ("Transport Flieger Staffel Condor" and "Transport Flieger Staffel 2002") and the Führer's courier squadron "Führer Kipeg Staffel". One of the Yem 200S-4/01 aircraft (with code GC + AF) was the personal aircraft of the Reichsfuehrer SS G. Himmler, this car was captured by the British at the end of the war. The total number of Fw 200 aircraft built during the war years was 252.

Characteristics of the Fw 200C-3/U4: crew — 7 people, power plant — 4 BMW Bramo 323ȳ-2 engines with a capacity of 1000 hp each. With. (746 kW), wing span - 32.84 m and its area - 116 m², aircraft length - 23.85 m, height - 6.3 m, empty weight - 17,000 kg, maximum takeoff - 22,700 kg, maximum speed — 360 km/h at an altitude of 4700 M, flight range — 3560 km, service ceiling — 6000 m, armament — 5 machine guns (three MG 131 and two MG 15), | cannon MO 151, up to 2100 kg of bombs and two 1045 kg Hs 293A rockets under the roof.

Ta 152

The Ta 152A-1 fighter was structurally similar to the Yem 190D-9 aircraft, but had four MO 151 guns and a FuG 24 radio station instead of the FuG 16ZY. In addition to the A series, machines were developed: the B, C, E and N series. Several pre-production Ta 152-0 machines were delivered in the spring of 1945 to the headquarters of the JG 301 fighter squadron, which were based jet aircraft Me 262.

Most production vehicles were produced in the Ta 152N-1 variant. The Ta 152N-2 variant had improved radio equipment, but on December 15, 1944, the RLM ordered that work on this variant be stopped. In total, 150 Ta 152H-1 machines were built before the end of the war, they were used in

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how many squadrons, mostly together with the Fw 190. However, most of the Ta 152 aircraft were destroyed during Allied air raids on factory parking before they were sent to the Luftwaffe. The Ta 152-1 fighters were also involved in the Mistel-4 program, where they were used in conjunction with the Ju 88G-7. At the end of the war, about 50 copies of the Mistelles were captured by the Allied forces in the Merseburg area.

Features Ta 152N-1: crew - 1 man, power plant - 1 engine Jumo 213E-1 with a capacity of 1750 liters. With. (1305 kW), wingspan - 14.4 m and its area - 22.6 m, aircraft length - 10.7 m, height - 3.35 m, empty weight - 3923 kg, maximum takeoff - 5220 kg, maximum speed — 755 km/h at an altitude of 12,500 m, cruising speed — 500 km/h at an altitude of 7,000 m, rate of climb — 17.5 m/s, flight range — 1,200 km (with an additional tank — 2,000 km), practical ceiling - 14,800 m, Armament - 1 gun MK 108 and 2 guns MO 131.

Ta 154

On September 22, 1942, the company proposed a project for a Ta 211 high-speed bomber capable of carrying one SC 1000 bomb or two SC 500 bombs. In addition to Toro, it could carry a Type E5 cassette with 223 SD 2 bombs or 42 SC 10 bombs. - driver Ta 211 should be equipped with two Jumo 211-R engines.

However, already on October 16, Field Marshal Z. Milch demanded that the project be reworked into a version of a night fighter. On November 13, 1942, the RLM assigned the designation Ta 154 "Moskito" ("Mosquito") to the project, ordering ten prototype fighters with Leto 213 engines. The first tests of the prototype were carried out by K. Tank himself. However, instead of the Jumo 213 engines, which were not ready, Jumo 211 E were used. The second prototype aircraft was equipped with a FuG 212 "Lichtenstein" C-1 locator. The third machine, Ta 154V3, was considered as a prototype of the Ta 154A-03 / U1 series, it was equipped with 1750 hp Jumo 213E engines. With.

According to the test results, the company received an urgent order for the construction of 250 Ta 154A-1 fighters, and in December 1943, a team was created for military testing of the Ta 154

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Erprobungskommando 154. Four experienced Ta 154 fighters with FuG-218 locators were used from January 1944 by I/NJG 3 at Grove (one machine) and by Sh/NJC 3 at Stade (three machines).

Serial production of the Ta 154A-1 was launched in Posen. Flight tests of the first serial machines began at the end of June 1944, however, during the testing process, the first two machines were lost. Until August 14, 1944, seven more aircraft flew around, but by that time the RLM had already decided to stop the fighter program.

In mid-May 1944, Focke-Wulf submitted proposals to the RLM for the conversion of fifteen Ta 154A fighters into the Ta 154A-0/U2 "Pulkzerstörer" ("Line Breaker") manned projectile. However, RLM issued an order for the conversion of only five cars. According to

According to the proposals, the nose of the production aircraft, including the cockpit, was converted into a warhead to accommodate 2,000 kg of explosives. In the middle part of the fuselage, a primitive cockpit for the pilot should be equipped, in which an ejection seat was installed. When approaching the formation of allied bombers, the pilot had to direct his projectile at the target, switch on the autopilot, and eject himself at the last moment.

The first Ta 154 "Pulkzerstorer" (serial number 120004), which became the prototype for the new version, first flew on August 5, 1944. On the same day, it was destroyed during an Allied air raid. Four more machines with serial numbers 12011, 12001, 120060 and 120104 were built by October 1944. However, none of the built projectiles was used in combat.

At the end of July 1944, the conversion of four Ta 154A machines intended for Mistel-5 began. In this bunch, the bottom plane, filled with 2500 kg of explosives, was the Ta 154A, and the top control plane was the Fw 190A-8. The bundle, whose maximum weight was 15,150 kg, was supposed to take off from a concrete runway. In order to speed up the start of assembly of the Mistelei, it was decided to supply the Ta 154A without warheads, since ferry flights with a warhead installed required some strengthening of the aircraft landing gear due to increased weight. Assuming

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It was expected that the first Mistel-5s would be ready for delivery to the troops at the end of August. It was expected that a total of fifty ligaments would be converted. Work continued with a high degree of urgency until mid-August, when orders were received from the RLM to convert these four aircraft into night fighters.

The company also developed a variant of a combination of two Ta 154 aircraft, while the control aircraft towed the projectile in a rigid tow. When approaching the formation of bombers, the tug was dropped, and the Ta 154 aircraft continued to fly side by side, connected by a control cable. Immediately before the attack, the cable was unhooked. However, the project of this bundle was not implemented. In early 1945, several Ta 154s were used in Dechfeld to train pilots retraining for jet aircraft.

Characteristics of Ta 154A-1: crew - 2 people, power plant - 2 Leto 213E-4 engines with a capacity of 1750 hp each. With. (1305 kW), wing span - 16.3 m and its area - 31.4 m, aircraft length - 12.55 m, height - 3.6 m, empty weight - 8940 kg, maximum takeoff - 9560 kg, maximum speed - height - 646 km / h at an altitude of 7100 m, flight range - 1350 km (with two 300-l external tanks - 1850 km), service ceiling - 10,000 m, climb time to a height of 8000 m - 14.5 min, armament - 2 guns MG 151 and 2 guns MK 108.

"Heinkel"

Ernst Heinkel built his first aircraft in 1911 at LFG, and subsequently worked for Albatross, Hansa-Brandenburg and Castiglioni. In 1922, Heinkel founded his own aircraft manufacturing company Ernst Heinkel A.S., which was one of the first to start manufacturing military aircraft - fighters, training aircraft and observation aircraft (He 42, He 45, He 46, etc.). In 1935, the firm was reorganized and its production capacity increased by more than 25%.

The He 111, originally designed for civil airlines, became a widely used German bomber. Not 112 was a competitor to the Bf 109

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in the competition for a standard single-seat fighter. One of the most famous achievements of the company was the world's first flight of the He 178 jet aircraft, performed on August 27, 1939. The He 115 flying boat, used for reconnaissance and mining, as well as

torpedo bomber, first took off in 1938. The He 177 heavy bomber took off in 1939; by the end of the war, the He 162 jet fighter and the He 219 night fighter were put into service. In 1944, almost 50 thousand people worked at 27 enterprises of the company .

Not 42

The He 42 biplane float aircraft was developed in 1931. It was produced in three versions: He 42A - training aircraft with the Junkers 1-5 engine, He 428 - training aircraft with the Junkers L-5G engine and using an ejection launch and He 42C - a training and reconnaissance aircraft with a Junkers L-5Ga engine.

On the eve and during the wars, the aircraft was used by the Luftwaffe for training naval pilots, as well as for reconnaissance and rescue operations. The total number of aircraft built was 85, it was also supplied to Bulgaria, where it was used to protect the coast.

Characteristics of Not 42C-2: crew - 2 people, power plant - | 390hp L-SGa engine With. (291 kW), wingspan - 14.0 and their area - 56.0 m², aircraft length - 10.6 m, height - 4.3 m, empty weight - 1710 kg, take-off Bec - 2420 kg, maximum speed - 192 km/h at a height of 1000 m, cruising speed - 186 km/h, service ceiling - 4200 m, climb time to a height of 1000 m - 5.6 min, range - 1050 km, armament - 1 machine gun MO 15 and | ny-blade MG 17.

He 45

A prototype of the He 45 biplane took off for the first time in the spring of 1932. An aircraft equipped with an engine BMW VI, intended for use as a light reconnaissance

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bomber. By the beginning of 1936, the He 45 was the Luftwaffe's largest production aircraft and was used in long-range reconnaissance squadrons, for advanced flight training and for the training of observers. The production of the aircraft was completed in the summer of 1936, the total production of the He 45 amounted to 512 aircraft.

In November 1936, He 45s aircraft were sent to Spain as part of the Condor Legion, while in the Luftwaffe they were in service with six air groups of long-range and six air groups of short-range reconnaissance. By the beginning of September 1939, most of the He 45 aircraft had been transferred from combat units to training units. Since the autumn of 1942, due to a shortage of He 45 aircraft, they began to be used on the Soviet-German front as night bombers.

Characteristics of Not 45: crew - 2 people, power plant - | BMW VI-7.3 engine with a capacity of 750 hp. With. (559 kW), wingspan - 11.5 m, area - 34.4 m², aircraft length - 10.6 m, height - 3.6 m, empty weight - 2100 kg, takeoff weight - 2750 kg , maximum speed - 290 km/h of land, service ceiling - 5500 m, time of ascent to an altitude of 1000 m - 2.4 min, range - 1200 km, armament - | machine gun MG 15, | machine gun MG 17 and up to 300 kg of bombs.

Not 46

The He 46 aircraft was developed as a short-range reconnaissance and communications aircraft. It entered the series in 1933 under the designation He 46c, equipped with a SAM-22B engine. In 1935, Bulgaria and Hungary ordered a batch of He 46 aircraft for their Air Force, the formation of which began in violation of the Treaty of Versailles. In 1936 Germany supplied 18 He 46eVi aircraft to Bulgaria and 36 He 46e Op aircraft to Hungary.

In September 1936, the first 20 He 46c aircraft were delivered to Spain, the following year they began to be delivered to the Luftwaffe, and in the summer of 1939 they were in service with five short-range reconnaissance squadrons. On the Soviet-German front from the summer of 1942 to March 1943, the 312th

short-range reconnaissance squadron of the Hungarian corps, which included 12 He 46eUn aircraft. Soon after the withdrawal of the surviving Hungarian vehicles from the battles, no

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German He 46c, which acted as night bombers and attack aircraft.

Characteristics of the He 46s: crew - 2 people, power plant - 1 BMW Vgato 3228 engine with a capacity of 650 hp. With. (485 kW), wingspan - 14.0 m and its area - 32.9 m², aircraft length - 9.5 m, height - 3.4 m, empty weight - 1766 kg, takeoff weight - 2300 kg, maximum speed - 257 km/h at an altitude of 800 m, service ceiling - 6000 m, climb time to a height of 1000 m - 2.6 min, range - 985 km, armament - | machine gun MG 15 and up to 200 kg of bombs.

Not 50/Not 66

The He 50 biplane aircraft was first demonstrated to officials in 1932 in Rechlin. As a result, the company received an order from the Ministry of Transport for three aircraft. The construction of these aircraft, equipped with the SAM-22B engine, was completed at the end of the summer of 1932. After testing in Rechlin, the company received an order for 86 aircraft of the He 50A series, which were supposed to be used as a dive bomber. In the He 50B reconnaissance and bomber version, a batch of aircraft was exported to Japan (under the designation He 66) and China (He 66a CH).

From October 1935, the Vluftwaffe formed the first dive-bomber units, which were supplied with He 50 and Ar 65 aircraft. Later, according to Mepe, the receipt of Hs 123 and Ju 87 aircraft, He 50 aircraft were transferred to flight schools. In 1943, not 50 of the summer schools were sent to night assault groups on the Soviet-German front. There they were assembled as part of two squadrons of the newly formed 2nd group of night attack aircraft, the machines of these squadrons were flown by Zston pilots. The squadrons took part in the fighting until September 1944, after which they were disbanded due to heavy losses of aircraft, lack of fuel and spare parts.

Characteristics of Not 50A: crew - | person (2 people — in the version of the scout), power plant — | BMW Vgato 3228 engine, 650 hp. With. (485 kW), wing span - 11.5 m and its area - 34.8 m², aircraft length - 9.6 m, height - 4.4 m, empty weight - 1600 kg, takeoff weight -

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2622 kg, maximum speed - 234 km/h at an altitude of 800 m, service ceiling - 6400 m, climb time to a height of 1000 m - 3 min, range - 600 km, armament - 1 MS 17 machine gun and one 500-kg bomb .

Not 51

A prototype of the He 51 biplane fighter first took off in the summer of 1933. A pre-production batch of 9 He 51A-0 aircraft equipped with a BMW VI-7.3Z engine was produced in 1934. The first production He 51A-1 machine failed. line in April 1935, at the end of the same year, the He 51V variant began to enter service. In the first half of 1936, coastal aviation units began to receive He 51 naval fighters on a float chassis. At the end of the summer of 1936, six He 51 fighters were sent to Spain to participate in the civil war, but combat experience showed that the He 51 no longer met world standards. In the spring of 1938, the transfer of He 51 fighters to flying schools began, where they were used to train pilots until the end of World War II.

Characteristics of Not 51V-1: crew - 1 person, power plant - | BMW VI-7,3Z engine with 750 hp With. (559 kW), wing span - 11.0 m and its area - 27.2 m², WIH- on the aircraft - 8.4 m, height - 3.3 m, empty weight - 1474 kg, take-off weight - 1900 kg, maximum speed

- 330 km / h at the ground, practical ceiling - 7700 m, climb time to a height of 4000 m - 7.8 minutes, range - 570 km, armament - 2 MG 17 machine guns.

Not 59

The He 59 biplane was developed as a reconnaissance bomber in the early 1930s, when the Luftwaffe had not yet been created. The first seaplane flight took place in Jan Bape 1932, the production version of the He 59B-2 was used by the Condor Legion in Spain as a night bomber and for coastal patrols.

In 1939, the first group of marine rescuers was formed, which received He 59C-2 and He 59D-1 aircraft, in addition to

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There are still 30 obsolete He 59V-2s in the units, which were used to control the movement of ships in the Baltic and North Seas. In April 1940, several He 59 aircraft were incorporated into K.Gr.zbV 108 and I/KG 200, where they were used to transport assault troops during the invasion of Norway and Denmark. On the morning of May 10, 12 He 59 aircraft from the Schwilben squadron delivered 120 paratroopers to the Meuse River to capture the bridge to Rotterdam, while four vehicles were lost.

During the Battle of England, He 59 planes from the Seenotdienstkommando were actively flying in the area of the English coast, according to the official German version, they were searching for the crews of the downed Luftwaffe planes. But when it became obvious that the planes with red crosses on the fuselages were used to search for British convoys and monitor them, the British Air Force command instructed its pilots to shoot down German seaplanes, as a result, 31 He 59 aircraft were shot down and 7 damaged. In the Black Sea, Not 59 were based from June 1941 near Constanta, where they were used for reconnaissance and covering convoys. Several vehicles were transferred to Finland, but since 1943 they were removed from service with rescue units. Several He 59Ds, equipped with additional navigational equipment and designated He 59N, were used to train navigators.

Characteristics of He 59B-2: power plant - two BMW VI-6.0ZU engines with a capacity of 600 hp each. With. (447 kW), wing span - 23.7 m and its area - 152.8 m², aircraft length - 17.4 m, height - 7.1 m, empty weight - 5000 kg, maximum takeoff weight - 9100 kg, maximum speed - 220 km / h at sea level, service ceiling - 3475 m, climb time to a height of 1000 m - 4.8 minutes, range - 1750 km, armament - 3 MG 15 machine guns and up to 1000 kg of bombs or mines or one torpedo .

not 60

The development of the He 60 seaplane, equipped with a BMW-VI 6.0ZU engine, began in 1932, the first prototype took off in early 1933. In July 1936, aircraft

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These He 60Cs entered the armament of the first squadrons of coastal aviation groups - 1./Ki.ÿÿ.St.106, 1./Ku.Fl.Gr.206 and 1./Ku.Fl.Gr.306. By this time, the production of Bepsii He 60D, which was distinguished by improved radio equipment, began. Six vehicles of the He 60E version fought on the side of the Francoists in Spain.

By the beginning of the war, coastal aviation had 54 aircraft in the North Sea and 27 aircraft in the Baltic. Due to low performance and weak armament, the He 60s were almost completely replaced by the beginning of 1940. However, even until mid-1941, they remained in service with the SAGr.125, SAGr.126 and SAGr.127 naval reconnaissance air groups, which participated in the invasion of the territory of the Soviet Union and operated in the Baltic and the Gulf of Finland. In total, about 200 aircraft were built during the serial production of the He 60.

Characteristics Not 60C: crew - 2 people, power plant - one BMW VI 6.0ZU engine with an HP 660 power. With. (492 kW), wing span - 12.9 m and its area - 54.0 m², aircraft length - 11.5 m, height - 4.9 m, empty weight - 2412 kg, maximum takeoff weight - 3360 kg, maximum speed - 225 km/h at an altitude of 1000 m, service ceiling - 5000 m, climb time to a height of 2000 m - 8.9 minutes, range - 765 km, armament - 1 MO 15 machine gun.

Not 70/Not 170

The first prototype of the He 70 light reconnaissance bomber took off | December 1932. The second experimental 06-sample under the designation He 70A in 1933 set eight international speed records at a distance of 100-2000 km with a load of 1-2 tons. BMW VI-7,3Z, and at the end of 1934 - He 70E light bombers and He 702 reconnaissance bombers.

In the fall of 1936, 18 He 70E-2 vehicles were sent to the Condor Legion in Spain. In 1937, He 70F aircraft were in service with five reconnaissance groups of the Luftwaffe. However, already in October of the following year, all He 70Es were transferred to flight schools and communications squadrons.

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The upgraded version of the aircraft under the designation He 170A-01 was delivered to Hungary. During the period from September 1937 to February 1938, 20 vehicles were delivered, equipped with a more powerful MW K-14 engine manufactured by Manfred Weiss Flugzeug und Motorenfabrik in Budapest (licensed version of the Gnome-Rhone engine). 14K). These aircraft were in service with the 1st separate long-range reconnaissance group, based at the Matyasfelde airfield near Budapest. In March 1939, they made their first sorties, when Hungary took part in the division of Czechoslovakia. In April 1941, Not 170 took part in the Balkan campaign, and on June 26, 1941, they made their first sorties in the outbreak of the war against the Soviet Union.

On its own initiative, the company carried out the modernization of the He 70E aircraft. The modernized machine, equipped with an OB 601 Aa engine and designated He 270, made its first flight in the spring of 1938. However, the RLM rejected the company's offer due to the difficult situation with the supply of OB engines, as well as plans to replace the He 70 reconnaissance Do 17-1. Production of the He 70 and its variants was discontinued, with a total of 304 aircraft built.

Characteristics of He 70E-2: crew - 3 people, power plant - 1 BMW VI-7,3Z engine with a capacity of 750 hp. With. (559 kW), wingspan - 14.8 m and its area - 36.5 m², aircraft length - 12.0 m, height - 3.1 m, empty weight - Toro - 2360 kg, take-off Bec - 3390 kg, maximum CKO height - 360 km/h At an altitude of 1000 m, service ceiling - 5450 m, climb time to a height of 4000 m - 15 min, range - 900 km, armament - | machine gun MO 15 and up to 300 kg of bombs.

Characteristics of Not 170: crew - 3 people, power plant - | BMW K-14 engine with 910 hp With. (679 kW), wing span - 14.8 m and its area - 36.5 m², aircraft length - 11.4 m, height - 3.2 M, takeoff Bec - 3540 kg, maximum speed - 413 km / h at an altitude of 3400 m, practical ceiling - 8300 m, climb time to a height of 1000 m - 2.7 min, range - 430 km, armament - 2 machine guns.

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He 72

Prototype of He 72 "Kadett" (Cadet) biplane training aircraft equipped with an "Argus" As 8B engine with a power of 140 hp. s., was built in 1932. It was serially built in two versions: He 72A - a training aircraft with an Az 8BR engine with a capacity of 150 liters. With. and He 72B - training and civilian aircraft with an engine

"Siemens" Šy14ŷ. The aircraft was actively used in the mid-1930s. in civil and military

aviation schools, during the war He 72V (in modifications He 721, with wheeled chassis and He 72W "Seekadett" with a float chassis) was used as a communications and reconnaissance aircraft.

Characteristics of Not 72V-1: crew - 2 people, power plant - 1 Sh14A engine with a capacity of 160 liters. With. (119 kW), wingspan - 9.0 m and their area - 20.7 M', aircraft length - 7.5 m, height - 2.7 m, empty weight - 590 kg, take-off weight - 900 kg, maximum speed - 194 km/h at an altitude of 1000 m, cruising speed - 158 km/h, service ceiling - 4200 m, climb time to a height of 2000 m - 14.0 min, range - 820 km.

Not 100 |

The development of the He 100 fighter began in the middle of 1937, in January of the following year the first prototype aircraft took off. A total of ten experimental machines were manufactured, which were to become prototypes of the A, B and C series. The eighth prototype of the He 100V8, equipped with a boosted engine OB 601, on March 3, 1939 set a world speed record for that time - 746.6 km/h.

Based on the test results, it was decided not to build the A series, B and C, but to focus on the development of the D series. - Chika, increased the area of the vertical tail, and installed a half-retractable radiator under the fuselage. However, the fighter was not accepted into service, so the D-1 series was not built, but the company was allowed to sell the aircraft for export. The Japanese purchased three vehicles, which received the naval designation AXHel,

and a license for them

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production for the country's air defense. The aircraft was purchased by the Soviet Union for study, except for Toro, negotiations on the purchase of a license were conducted by the Hungarian company Manfred Weiss, but further negotiations things didn't work out.

The remaining He 100s were used partly as air defense fighters to guard the Marynz plant, and partly for propaganda purposes to misinform the enemy. So, in the magazine "Der Adler" for September 1940 (the press organ of the Luftwaffe), photographs of the He 1000-0 with emblems and in standard coloring were published, which were presented as photographs of the new He 113 fighter, which participated in the attack on Denmark and Norway. After the beginning of the night bombing of Germany by the British, photographs of the He 1000-0 aircraft in ok-night fighter paint appeared in the German press. The remaining He 1000-0 machines were destroyed during a massive Allied air raid on the factory in Mariene.

Characteristics Not 100D-1: crew - | man, power plant - | engine OV 601 M with a capacity of 1175 liters. With. (876 kW), wing span - 9.4 m and its area - 14.6 m², aircraft length - 8.2 m, height - 3.6 m, empty weight - 1810 kg, take-off Bec - 2500 kg, maximum speed - 670 km/h at an altitude of 5000 m, cruising speed - 640 km/h, service ceiling - 11,000 m, climb time to an altitude of 6000 m - 7.8 min, range - 890 km, armament - | cannon MO EE and 2 machine guns MO 17.

Not 111

The He 111 aircraft, developed in 1934, was intended from the very beginning for dual use - as a civil transport aircraft and as a medium bomber. The first flight of the experimental He 111 machine with BMW-VI 6.0 engines took place on February 24, 1935. After testing in Rechlin in the fall of 1936, the aircraft was finalized, and soon the first serial He 111B-1 machines entered the 154th Bomber squadron (later KG 27). He 111V-1 bombers were in service with the Condor Legion in Spain; the aircraft made their first combat sortie on March 9, 1937.

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machines of the He 111V-2 version, equipped with DB-600CG engines, began to leave.

By the beginning of hostilities in Europe, He 111P with DB 601A and He 111H engines with Lipo 211 engines were put into service. , KG 4, KO 26, KG 27, KG 51, KG 53 and KG 54 (689 vehicles). During the German invasion of Denmark and Norway, bombers from KG 4, KO 26 and KG 100 operated. Soon P / KO 26 was transferred from Norway to Sicily, and P / KO 4 was relocated to Romania.

At the end of May 1941, squadrons KO 27, KG 53 and KO 55, fully re-equipped with He 111H, were transferred to the east to prepare for the planned attack on the Soviet Union. On the Soviet-German front, as the situation worsened, He 111s were increasingly used to solve transport problems. At the end of 1942, most of them took part in the supply of German troops encircled near Stalingrad.

In the summer of 1944, specially converted He 111N-16 and He 111N-20 from PI / KS 3 began to attack England using Fi 103 cruise missiles. Aircraft of this group, based in Holland, launched 300 missiles at London since the end of July, in Southampton - 90 and in Gloucester - 20. Since November 1944, in addition to this group, P / KS 53 and PI / KS 53, operating from German airfields, were involved in the shelling of England. The last missile launch against England took place on January 14, 1945. In total, the KG 53 squadron fired 1200 missiles, while the squadron lost 77 of its own vehicles.

From April 1945, all the remaining He 111 aircraft (107 aircraft) performed only transport tasks, with the exception of 27 aircraft from a separate group, which made night raids on railway communications. The total number of He 111 aircraft built was about 7300 copies.

Characteristics of He 111H-16: crew - 5 people, power plant - 2 Leto 2NE engines with a capacity of 1350 liters each. With. (1007 kW), wing span - 22.6 m and its area - 86.5 M², aircraft length - 16.4 m, height - 3.4 m, empty weight -

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8680 kg, maximum takeoff weight - 14,000 kg, maximum speed at an altitude of 6000 m - 436 km/h, service ceiling - 6700 m, climb time to an altitude of 6000 m - 42.0 min, range - 1950 km, armament — 2 machine guns MG 15, 1 machine gun MO 131, two machine guns MO 81, 1 cannon MO-EE and up to 2000 kg of bombs.

Not 1112

During the development of the heavy gliders Me 321 and Ju 322, the problem arose of choosing an appropriate tug for them. The commonly used method of towing with three Bf 110C-1s, the so-called "troika-schlepp", was dangerous enough for this purpose, and aircraft like the Ju 90 lacked the power required for the task. In 1941, two prototypes of the twin-body aircraft He 1112 ("Zwilling" - "Gemini") were built. The He 1117 aircraft consisted of two He 111N-6 bombers, connected by a middle wing compartment, on which three engines were installed, the total number of engines on the aircraft was five Jumo 211E-2/5-2. After testing the prototypes at the end of 1941, the power structure of He 1117 was reinforced. During takeoff, two boosters with a thrust of 500 kgf each, installed under each fuselage, and two boosters with a thrust of 1500 kgf under the middle wing compartment (on both sides of the middle engine) were additionally used. The towing cable for the Me 321 glider was divided and fastened in the root parts of the middle section of the aircraft wing, connecting between the tail stabilizers into a single cable with a diameter of 16 mm. Smaller gliders (such as Co 242) could be towed in pairs on independent cables attached to

each fuselage of He 111Z. During test flights, three small gliders were towed simultaneously.

The production of He 1112 was launched at the beginning of 1942, and by the end of that year the first machines were put into operation. Only the prototypes and a few first machines used the fuselages of serial He 111N-6, all subsequent machines were based on the He 111N-16. The crew of Not 1117 consisted of seven people. The crew commander, radio operator, gunner and mechanic were located in the left fuselage, the second pilot

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lot (OH same navigator), shooter and mechanic. The armament consisted of a 20-mm MOEE cannon in the forward part of the right fuselage and a MG 15 machine gun in the forward part of the left fuselage. In addition, each fuselage had one MG 131 machine gun on top and one MG 15 machine gun in the tail section below. Other armament options were also tested, including four MG 131s, two twin MG 91Z machine gun mounts, and five MG 81 cannons. Of the twelve He 1117 tugs built, eight vehicles were lost during operation, shot down by enemy fighters, or destroyed during bombing. One of the remaining four vehicles, belonging to the transport group TGr 30, based in Grossostheim, took part in one of the last battles on the Western Front. She dropped a paratrooper in the rear of the Allied troops during the battle in the Ardennes in 1944.

Characteristics of He 1117-1: crew - 7 people, power plant - 5 Leto 211F-2 engines with a capacity of 1350 hp each. With. (1007 kW), wing span - 35.4 m and its area --- 148 m², aircraft length - 16.4 m, distance between the fuselage axes - 12.8 m, empty weight - 21,500 kg, take-off weight - 28,600 kg, maximum speed - 435 km/h, towing speed - 250 km/h (2 Go 242 gliders) and 220 km/h (1 Me 321 glider), service ceiling - 10,000 m, cruiser altitude - sky flight - 5800 m.

Not 112

In the summer of 1935, the Heinkel firm completed the first of the He 112 prototypes, which, together with the BE 109, participated in the competition for the development of a light single-seat fighter. The fourth model, equipped with the Jumo-210Da engine and which became the prototype of the He 112A series, took part in flight tests together with its competitor Bf 109 in the autumn of 1936 and lost the championship to it.

However, the losing company did not stop further work on the fighter. In December 1936, He 112V4 was sent to Spain for military trials as part of the Condor Legion. Experimental machines of the A series were demonstrated in 1937 in Zurich, Milan and Helsinki. Parallel to de

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A demonstration of experimental machines of the A series, work was underway on the He 112B series fighter, which was almost completely redesigned. The prototype of the new He 112V9 series took off for the first time in July 1937. In the autumn of the same year, a delegation of the Japanese fleet arrived in Germany specifically to study the He 112, which, in the conditions of the already begun war with China, needed a coastal fighter. As a result, the Japanese ordered the construction of 30 He 1128 machines.

The first 12 He 112B-0 machines arrived in Japan in the late spring of 1938 (there they received the designation A7 Hel), the remaining machines arrived in the summer in Poland /) C 132. In early 1939, the Romanian government ordered from the company a batch of 24 He 112V vehicles to equip two squadrons. Deliveries to Romania began in the spring of 1939, and in September of the same year, both squadrons were fully equipped.

Characteristics Not 112B-0: crew - 1 man, power plant - 1 Leto 210Ea engine with a capacity of 680 liters. With. (507 kW), wing span - 9.1 m and its area - 17.0 m², aircraft length - 9.3 m, height - 3.8 m, empty weight - 1621 kg, takeoff weight - 2250 kg, maximum speed -

510 km/h at an altitude of 4700 m, cruising speed - 480 km/h at an altitude of 4000 m, service ceiling - 8300 m, range - 1100 km, armament - 2 MG 17 machine guns, 2 MG-FF cannons and up to 60 kg bombs.

Not 114

A prototype He 114 reconnaissance seaplane, made according to the biplane scheme, was built in the spring of 1936. At the beginning of the next year, production of a pre-production batch of He 114A-0 began, and then serial He 114A-1 machines with a BMW 132K engine.

The first machine was delivered to the school of naval aviation in June 1937. Following the A-1 variant, the He 114A-2 variant with a reinforced fuselage and mounts for launching from a catapult began to be produced. The first He 114A-2 aircraft in 1938 entered the squadron of coastal aviation 1./Koi.El.Sbg.506. However, He 114 aircraft were not popular with the troops, so RLM offered the company to export them.

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In 1939-1940 rr. Sweden purchased 12 He 114B-1 machines, which were delivered to Flotilla 2 under the designation S-17BS. Under a contract with Romania, 24 He 114S-1 aircraft were built, but before the start of the war with the Soviet Union, the contract was canceled, and the aircraft were delivered to 1./8ASg.125, where they were used along the Baltic coast and in the Gulf of Finland. At the end of the year, the 1./SAGr.125 nepe- squadron was equipped, and the He 114-1 aircraft were transferred to Romania. They participated in the war against the Soviet Union until the end of 1943, operating in the Black Sea as part of the 101st and 102nd coastal reconnaissance squadrons.

Characteristics of Not 114A-2: crew - 2 people, power plant - 2 BMW 132K engines with a capacity of 960 hp each. With. (716 kW), wingspan - 13.6 and their area - 42.3 m, aircraft length - 11.6 m, height - 5.2 m, empty weight - 2300 kg, takeoff weight - 3675 kg, maximum speed - 332 km/h at an altitude of 1000 m, time to climb 3000 m — 18.2 min, service ceiling — 4900 m, range — 930 KM, armament — 1 machine gun MG 15 and 100 kg of bombs.

Not 115

The seaplane He 115 made its first flight in 1936, two years later it set eight world speed records in its class. The He 115A-1 version entered service in 1938, followed by the He 115A-2 version. In 1939, six He 115A-2 machines were delivered to Norway, and 10 machines to Sweden.

By the beginning of the war, about 60 He 115A and He 115B aircraft (with increased fuel capacity) were in service with coastal aviation units. In addition to conducting reconnaissance of the Baltic coast during the invasion of Poland, their main task was to lay mines off the east coast of England. The first such mission on November 20-21, 1939 was carried out by squadron 3./Ku.Fl.Gr. 906. Such operations continued for more than a year and a half, during which time the air-miner units lost 33 aircraft and six aircraft were badly damaged.

Before the end of the Battle of England, the first vehicles of the He 115C version arrived, which received reinforced weapons.

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nie. The He 115C-2 aircraft, which appeared in 1941, had reinforced floats for operations in winter conditions, the He 115C-3 and He 115C-4 aircraft were, respectively, a minelayer and a torpedo bomber. Production of the He 115 was suspended in 1941, and resumed in 1943 with the supply of He 115E multipurpose aircraft to the Luftwaffe.

He 115 aircraft were sometimes used by the German secret services for their operations. So, for example, in September 1944, Not 115, which took off from bases in Norway as part of the operation

"Moewe M" was carrying five secret agents who were supposed to land on the coast of Scotland. The purpose of the operation was to collect information on the extent of damage received during the attacks on the territory of England with V-2 ballistic missiles. Most likely, an aircraft from the reconnaissance squadrons of 1./Ki.N.Og was used. 906 or 1./Kb.Fl.Gr. However, at the moment of the given plan of the landing of the group, the He 115 aircraft was shot down by the Spitfire fighter, the fate of the crew and agents unknown.

The total number of He 115 aircraft built was about 500 copies.

Characteristics of He 115C-1: crew - 3 people, power plant - 2 BMW 132K engines with a capacity of 960 hp each. (716 kW), wing span - 22.28 m and its area - 86.7 m, aircraft length - 17.3 m, height - 6.59 m, empty weight - 6870 kg, maximum takeoff weight - 10 680 kg, maximum speed — 300 km/h at an altitude of 1000 m, time to climb 1000 m — 5.1 min, service ceiling — 3200 m, range — 2800 km, armament — 2 MG 15 machine guns, 2 MG 17 machine guns, 1 MG 151 cannon and up to 1250 kg of bombs (or mines) or one 500 kg torpedo.

Not 162 |

On September 8, 1944, the RLM issued technical requirements to aviation firms for the development of a "people's fighter" (Volksjäger). This single-seat aircraft with one BMW 003A turbojet engine was supposed to weigh no more than 2000 kg, have a flight time of at least 20 minutes, a maximum speed of 750 km/h, and a take-off distance of no more than 500 m. It was supposed to use two 30 mm caliber guns as weapons. Besides,

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The machine had to be as simple as possible in production, requiring a minimum of scarce materials and skilled labor. Pilots for these planes were supposed to be trained in the organizations of the Hitler Youth, mainly from graduates of the glider school in Trebbin. The following companies took part in the draft design competition: Arado, Blom & Voss, Fieseler, Focke-Wulf, Heinkel, Junkers, Siebel and, on their own initiative, Team 9 » brothers Horten.

As a result of the preliminary design meetings held on September 15 and 19, the Blom and Voss project P.211 was declared the winner, and the Heinkel project took second place. However, already on September 23, Z. Heinkel demonstrated a model of his aircraft, and on September 30 he was given a contract for the construction of a "people's fighter" He 162A "Salamander" ("Salamander").

The terms of the contract were extremely tough: the development of the aircraft had to be completed by January 1945. By October 29, the drawings were ready, and already on December 6, the first flight of the prototype He 162U1, piloted by test pilot Captain Peter, took place. The flight went relatively well, but while trying to develop maximum speed, the landing gear door was torn off. However, on December 10, during the demonstration of the aircraft to the high command, while flying at low altitude, the aircraft's right wing broke off, the aircraft crashed, and Captain Peter died.

After 12 days, the second experimental aircraft He 162U2 took off, on which 2 MK 108 guns were installed. The aircraft had a straight wing and spaced tail. The BMW 003 was installed above the fuselage behind the cockpit. The fuselage was made of duralumin, and the wing (with the exception of the tips made of aluminum alloy), the wings of the front landing gear niche and the skin of the radio equipment compartment were made of wood. The cockpit had a minimum of necessary instruments and an ejection seat (fired with a squib). Behind the cockpit was the main fuselage fuel tank with a capacity of 695 liters, in the wing - an additional tank with a capacity of 180 liters.

The production of He 162A was organized at the Heinkel plant in Rostock, the Junkers plant in Bernburg and

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Mittelwerke plant. The estimated rate of production was to be 1,000 vehicles per month in April 1945, and 2,000 vehicles in May.

From January 1945, the Erprobungskommando 162 subdivision carried out military tests of two modifications of the A-series vehicles, which differed from each other mainly in armament - the He 162A-1 had two MK 108 guns, and the He 162A-2 had two MO 151 guns. With the normal takeoff weight of the aircraft, its flight time was twenty minutes, in the reloading version (2971 kg) with additional fuel - two hours.

Initially, it was supposed to create a special fighter group I / JG 80, but then they decided to re-equip the Ha He 162 fighter squadron JG 1. Flight personnel I / JG | arrived on February 9, 1945 in Parchim for training under the guidance of Heinkel test pilots and to receive new machines. On 31 March, the rearmed group I/JG 1 was ordered to move to Lek. Behind her, she began to master new equipment and P / JC 1, which arrived in Rostock for new machines. The next on the list for rearmament were Sh /) S | and GTO 400. However, the lack of fuel and lack of time did not allow the JG | and JG 400 aircraft He 162. By the end of April, as part of the fighter squadron JG | there were about 50 He 162A machines. 21 April I/JG | carried out the first attack on the Allied airfield, losing one aircraft.

In addition to combat vehicles, a two-seat training version of the He 162A-3 without armament and with a reduced fuselage fuel tank was developed. In total, up to May 1945, 116 aircraft were built. With the end of the war, a large number of He 162 went to the allies, and they were carefully studied.

Characteristics Not 162A-2: crew - | person, power plant — 1 turbojet engine BMW 003E-1 with a thrust of 800 kgf, wingspan — 7.2 m and its area — 11.1 m², aircraft length — 9.03 m, height — 2.6 m, weight empty — 1664 kg, takeoff weight — 2466 kg, maximum speed — 880 km/h, service ceiling — 12,000 m, flight range — 970 km, armament — 2 MG 151 guns.

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He 177

In 1938, the RLM issued technical requirements to the Heinkel firm for the development of a heavy bomber. When developing a new bomber, the R.1041 project started back in September 1936 was taken as a basis. In November 1939, the company received an order for the construction of six experimental aircraft under the designation He 177 "Greif" ("Griffin") with two OB 606 engines (each of which, in essence, was a twin OB 601 engines) , in February next year - for another 12 cars. The first prototype had not yet taken off, and on July 6, 1939, a pre-production batch of 20 He 177A-0 aircraft was ordered, on October 3 the order was increased to 30 TOB aircraft.

The first He 177VI took off on November 19, 1939. Persistent engine overheating problems and other setbacks delayed production, so the first production He 177A-1 was not delivered to KG 40 for military trials until July 1942. tests, He 177 aircraft took part in raids on England, but the results were not particularly impressive. Nevertheless, serial production of the He 177A machines began in March 1942, part of the order was transferred to the Arado company, where 35 He 177A-0 and 130 He 177A-1 machines were built, which were produced with various armament options. In the autumn of 1942, the I/KG 4 began to be re-equipped with the He 177A-1, followed by the 1/KS 50, which was then transferred to Zaporozhye to test bombers in winter conditions.

Several versions of the He 177A-3 were built, including the He 177A-3/R3, which could carry three Hs 293 anti-ship missiles, the He 177A-3/K5 with 75 mm in the ventral gondola, and the He 177A-3/K7 torpedo bomber. He 177A-3 aircraft were used in KOg. 2 for supply

besieged German troops in Stalingrad in January 1943, and a small number of He 177A-5 aircraft were adapted to the role of the destroyer of the formation of allied bombers, these machines had launch tubes installed in the bomb bays for firing rockets upwards.

Not 177A-5s were also used for night bombing of England in early 1944, the first combat raid on London took place on January 21st. Bombers from 1./KS 40 and

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3./KG 100 started from France and landed in Germany. In early February, after two raids on London, 1./COP 40 squadron was replaced by 2./COP 100 squadron. Bombers from P/COP 40 attacked Allied shipping in the Anzio area on 23 January, but without success. The next day, 11 planes took off from Bordeaux for a bombardment, HO again to no avail. Soon, P/KS 40 again returned to performing reconnaissance flights over the Atlantic, but by that time only 6 He 177 aircraft remained in its composition. In February 1944, bombers from 3./KG 40 operated in northern Norway. During 1944, He 177s were flown less and less due to shortages of fuel, spare parts and crews.

The He 177A-5 version was the last one used by the troops. Several other versions remained unrealized, such as the He 177B with four BMW 810 engines or the He 177U38 modified into a German atomic bomb carrier. In total, about 1200 copies of He 177 were built.

Characteristics of He 177A-5/R2: crew - 6 people, power plant - 2 RV 606 engines with a capacity of 2950 hp each. With. (2200 kW), wingspan - 31.44 m, aircraft length - 20.4 m, height - 6.4 m, empty weight - 16,900 kg, takeoff weight - 31,000 kg, maximum speed - 488 km / h per altitude 6000 m, rate of climb near the ground — 190 m/min, range — 5500 km, service ceiling — 8000 m, armament — 2 MG-FF cannons, 3 MG 131 machine guns and 1 MO 81 machine gun, bomb load up to 6000 kg or 2 guided missiles N \$ 293.

Not 219

The development of the He 219 "Uhu" ("Filin") night fighter, equipped with two DB 603G engines, began in January 1942. The He 219 became a further development of the multi-purpose aircraft P.1060, the project of which was developed at the firm on its own initiative.

The prototype, equipped with two OV 603A engines, took off on November 15, 1942. The pilot and navigator were located back to back in the cockpit. Not 219 became the first combat aircraft in the world equipped with a catapult

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ruemgmi armchairs. The armament consisted of two MK 108 cannons in the root part of the round, four cannons (two MG 151 and two MK 108) in the ventral gondola and two vertically firing MK 108 cannons behind the cockpit. After the He 219 successfully completed demonstration battles with Do 217N and Ju 885 aircraft on March 25, 1943, the RLM decided to increase the order for the He 219 to 300 vehicles.

In April 1943, a small number of He 219A-0 pre-production aircraft entered service with the I/NJG 1 night fighter group based in Holland. On the night of June 12, 1943, the commander of the group, Major W. Streib, shot down 5 British Lancaster bombers on the Owl. Over the next 10 days, He 219 aircraft from I/NJG 1 Headquarters shot down 20 British bombers. On the night of November 3, 1944, Sergeant Major Morlock shot down six bombers in one sortie. However, I/NJG | It remained the only unit in service with the KOTO-swarm He 219, since the night fighter supply program was interrupted in May 1944. A total of 268 He 219 aircraft were built.

Characteristics of He 219A-7 / K-1: crew - 2 people, power plant - 2 OV 603C engines with a capacity of 1900 hp each. With. (1417 kW), wingspan - 18.55 m and its area - 44.5 mg, aircraft length - 15.55 m, height - 4.1 m, empty weight - 11,210 kg, takeoff weight - 15,300 kg, maximum speed — 665 km/h at an altitude of 7,000 m, cruising speed — 535 km/h, climb time to a height of 10,000 m — 18.8 min, service ceiling — 12,700 m, range — 2,000 km, armament - 6 cannons MK 108 (2 in the wing, 2 in the lower fairing and 2 in the "shrage music") and 2 cannons MC 151.

"Henschel"

Henschel und Sohn, founded in 1848, was well known in the world as a manufacturer of locomotives, trucks, buses and machine tools. In 1932, the company opened an aircraft manufacturing branch, which in March 1933 was reorganized and renamed Henschel Flugzeugwerke AG. Initially, the production of "Henschel" was located in

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Johannisthal, a suburb of Berlin, where it was planned to build Ju 86D, Ju 88 and Po 17 aircraft under license. But after the opening of a branch for the production of licensed Daimler-Benz engines in 1936, the main production facilities of the company were transferred to Schönefeld.

Henschel's own aviation developments were less successful, although the Luftwaffe was armed with the Hs 123 biplane dive bomber, the Hs 126 reconnaissance aircraft and the Hv 129 attack aircraft, and at the end of the war, guided missiles were being developed. Efforts to create a high-altitude bomber Hs 130 ended in failure, and the development of the Hs 132 jet attack aircraft was interrupted with the surrender of Germany.

Hs 123

The Hs 123 aircraft, developed in accordance with the requirements of 1933 for a dive bomber, was equipped with a BMW 132A-3 engine with a power of 650 hp. With. (485 KBr). The prototype flew for the first time in 1938, and according to the results of comparative tests, it surpassed its competitor Fi 98.

Three experimental machines were tested in Rechlin in August 1935, as a result, wings were broken on two machines during a dive. Taking into account the test results, the fourth sample was finalized, after which the company received an order for mass production of Hs 123A-1 with a more powerful BMW 1320 engine.

In the autumn of 1936, the first Hs 123A aircraft entered service with the J./StG 162 squadron, and in December of the same year, five aircraft were sent to the Condor legion in Spain. The Spanish Falangists, satisfied with the results of the combat use of aircraft, requested additional supplies of Hs 123A. In the summer of 1938, the Falangists formed "Group 24", which consisted of 16 Hs 123A aircraft. However, the career of the Hs 123A dive bomber in the Luftwaffe did not last long, because in 1937 it began to be replaced by the Ju 87 aircraft. In the autumn of 1938, it was ordered to stop production of the Hs 123A. By the beginning of the war, the only unit armed with these aircraft was the II(Schlacht)/LG 2 group.

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They took to the air for the first attack BO in the Second World War. The success of the Hs 123A in the Polish campaign made an impression on the German command, so they were left in service.

About 50 Hs 123A vehicles took part in the invasion of Belgium and France in May 1940. Then they took part in the Balkan campaign, after which they were transferred to the Soviet-German front. These vehicles were in service with the 1st attack aircraft squadron Sch.G 1, which

In October 1943, it was renamed SG 2. Due to combat losses, the number of vehicles was constantly reduced, and by mid-1944 they were all lost.

Characteristics of Hs 123A-1: crew — 1 person, power plant — | BMW 1320 engine with 680 hp With. (656 kW), wingspan - 10.5 m (upper), 8.0 m (lower) and their area - 24.85 m², aircraft length - 8.33 m, height - 3.2 m, Bec empty - 1500 kg, maximum take-off weight - 2215 kg, maximum speed - 340 km/h at an altitude of 1200 m, cruising speed - 315 km/h at an altitude of 2000 m, service ceiling - 9000 m, flight range - 855 km, aircraft - zhenie - two machine guns MO 17 and up to 450 kg of bombs.

Hs 126 |

In 1935, Henschel developed the Hs 122 short-range reconnaissance aircraft to replace the He 45 and He 46, but the aircraft was not accepted by the Luftwaffe. Then the chief designer of the company Friedrich Nikolaus, taking the Hs 122 as a basis, developed the Hs 126 machine, which received a new wing, landing gear and cockpit canopy, the observer was located in an open cockpit. During 1937, 10 Hs 126A-0 pre-production vehicles were built, some of them were in trial operation in the reconnaissance units of the Luftwaffe in the spring of 1938.

The production aircraft Hs 126A-1 were generally similar to the pre-production aircraft, but equipped with a BMW 1320 engine and a Rb 12.5/9x7 camera. Six aircraft of this version were used by the Condor Legion in Spain in 1938, and then they were handed over to the Spaniards, in addition, 16 aircraft were delivered to the Greek Air Force. The first Luftwaffe unit to switch to Hs 126A-1 was the reconnaissance squadron

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Aufkl.Gr.35. In the summer of 1939, Hs 126B-1s equipped with the Vgato 323A-1 or Vgato 323A-2 engine and FuG 17 radio equipment began to roll off the assembly line. By September 2, 1939, the Luftwaffe already had 275 Hs 126 vehicles, they were almost completely replaced obsolete He 45 and He 46.

During the invasion of Poland, the 1st air fleet included nine short-range reconnaissance squadrons with Hs 126 aircraft. Losses among them were insignificant due to the lack of effective air defense systems among the Poles. However, on the Western Front, the actions of Hs 126 scouts in 1940 were accompanied by huge losses. It became clear that the aircraft was obsolete, so its production was curtailed in January 1941, and in 1942 the Hs 126 aircraft were replaced by Fw 189 aircraft. In total, more than 600 copies of the Hs 126 were built.

Characteristics of Hs 126B-1: crew - 2 people, power plant - | engine "Vgato" 323A-1 with a capacity of 850 liters. With. (634 kW), wing span - 14.5 m and its area - 31.60 m², aircraft length - 10.85 m, height - 3.75 m, empty weight - 2030 kg, maximum takeoff weight - 3090 kg, maximum - speed - 310 km/h at sea level, service ceiling - 8300 m, flight range - 720 km, armament - two MG 17 machine guns and up to 50 kg of bombs.

Hs 129

The development of the Hs 129 attack aircraft, armed with two MO-EE cannons and two MG 17 machine guns, has begun | October 1937, soon the company received an order for eight pre-production machines. In December 1941, the Hs 129 variant went into production, equipped with Gnome-Rhone 14M engines and MG 151 guns instead of MG-FF. The Hs 129V-1 was most widely used on the Soviet-German front, in smaller quantities - in North Africa, Italy and France, however, due to problems with the engine, its actions were not particularly successful.

By the end of 1942, the increased power of the armored vehicles of the Soviet troops led to the development of attack aircraft of the Hs 129-2 version with more powerful weapons. Appearing in units at the beginning of 1943, this version already in July took part in the battles near Kursk and Belgorod. ultimate

The product was the Hs 129B-3 version, 25 machines of this type were equipped with a 75-mm VK-7.5 gun. Such aircraft arrived at the end of 1944 in squadrons 10. and 14.(Pz)/SG 9. Although the gun was very powerful and capable of knocking out a tank with one shot, the aircraft turned out to be overweight and very vulnerable. With this in mind, as well as in conditions of lack of fuel, the Hs 129V-3 aircraft were used only against Soviet tanks breaking through to the rear of the German troops. By the end of the war, almost all Hs 129s were lost. The total production of Hs 129B was 866 vehicles.

Characteristics Hs 129B-1/K2: crew - 1 man, power plant — 2 Gnome Rhone 14M engines with a capacity of 700 hp each. With. (522 kW), wingspan - 14.2 m and its area - 29.0 m², aircraft length - 9.75 m, height - 3.25 m, empty weight - 3810 kg, maximum takeoff weight - 5110 kg, maximum speed — 407 km/h at an altitude of 3830 m, service ceiling — 9000 m, flight range — 560 km, armament — 2 cannons MG 151, 1 cannon Mk 101 and 2 machine guns MG 17.

hs 132

In May 1944, the RLM issued a contract to Henschel for the construction of six prototypes of the Ka Hs 132 jet attack aircraft. Externally, the attack aircraft looked like the He 162 "people's fighter" - the engine was located on top of the fuselage, the tail unit was spaced apart. The fuselage of the aircraft was made of aluminum alloys, the wing was made of wood, and the tail unit was made of honeycomb structures. The pilot was located lying in the glazed forward fuselage. This arrangement of the pilot in the cockpit was not unusual for the German aviation of that time, OHO was caused by the following circumstances.

Back in the early 40s. The aviation technical group in Stuttgart (Flugtechnische Fachgruppe Stuttgart), on the instructions of the RLM, was studying the effect of flight overloads of 30G on the pilot's performance in various ways of positioning him in the cockpit. The studies were carried out using a specially designed FS 17 airframe calculated for a maximum G-force of 14 G. After completion of the test program, the DVL institute, which

5 M. and V. Kozyrevs 129

which was the lead organization in this program, decided to develop an experimental aircraft. For this purpose, the Berlin aviation technical group (Flugtechnische Fachgruppe Berlin), which had aviation workshops and technical personnel at its disposal, was connected to the work. In the spring of 1943, in accordance with the technical requirements, the B 9 ("Berlin") aircraft was developed, which was intended to solve the following tasks:

development of technical solutions necessary to provide a good view to the pilot when he is located in the cockpit in the supine position;

study of the effect of positive and negative HbIX overloads of up to 12 g on the pilot's performance;

practicing safe techniques for recovering an aircraft from a dive with high g-forces;

development of the optimal design of the lodge on which the pilot was located, etc.

Test flights of aircraft B 9 began in April in Rechlin. By the end of October 1943, the number of pilots who tested it in flight reached 33. Among them were: technical director of the Focke-Wulf company K. Tank, MD H. Wiesehofer from DVL, test pilot X Scheidhauser from the team of the Horten brothers, test pilot H. Dittmar from the company

Messerschmitt, representatives of Blom and Voss, DFS, RLM technical departments and the Rechlin test center. It was found that in the supine position the pilot can withstand 1.5 hours of flight without feeling any discomfort. In the prone position, the test pilots quite satisfactorily withstood G-forces of 8.5 g when exiting dives and 6 g during steep climbs in a spiral. Such overloads could not be maintained by the pilots in a normal sitting position in the cockpit.

It was these conclusions obtained during the tests of the B 9 aircraft that became the reason for choosing a cockpit with a recumbent position for the Hs 132 attack aircraft. The pilot climbed into the cockpit through the upper armored hatch. To protect against projectiles and bullets, the pilot's bed was made of 8.5 mm armor, a transparent screen made of reinforced glass 68 mm thick was installed in front, and it was also covered with a plate on top.

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one made of reinforced glass with a thickness of 50 mm. In addition to this, the cabin was protected by 8 mm armor, and an armor plate 50 mm thick was installed in front from below under the glass screen. On the right side of the pilot there was an emergency escape lever. When it was pressed in flight, the front landing gear was extended, which was under the pilot's bed, the rear part of the bed was detached and lowered down. After that, the pilot slipped out of the aircraft through the front pillar niche and descended by parachute.

In total, it was supposed to develop three variants of the aircraft for mass production:

Hs 132A - dive bomber with BMW 003A-I engine and 1000 bomb load kg;

Hs 132B - attack aircraft with a Jumo 004B-2 engine, two MG 151 cannons with 250 rounds of ammunition and a bomb load of 500 kg;

Hs 132C is an attack aircraft with a HeS 011 engine and an additional NUK 509 rocket engine in the tail, armament consisted of two MK 108 cannons with 60 rounds of ammunition, two MG 151 cannons with 250 rounds of ammunition and a bomb load of 1000 kg.

The first optional Hs 132M1 was ready in the spring of 1945. At the time of the capture of the Henschel plant in Austria by Soviet troops, two more cars were under construction - Hs 132V2 (80% readiness) and Hs 132V3 (75% readiness).

Characteristics of Hs 132A: crew - 1 man, power plant — 1 BMW 003A-1 turbojet engine with a thrust of 800 kgf, wingspan - 7.8 m and area - 14.7 m², aircraft length - 8.8 m, height - 2.95 m, empty weight - 2241 kg, take-off weight - 3512 kg, maximum speed at an altitude of 6000 m - 783 km/h, practical ceiling - 11200 m, range - 530 km, armament - up to 1000 kg of bombs.

"Horten"

But 229 (Go 229)

At the end of August 1943, Team 9, led by the brothers Walter and Raymar Horten, received an order from the RLM to build two prototype strike aircraft.

z 131

and Hs 132. The deadlines were very tight: the first car (without engines) needed to be prepared by March 1944, the second car with two BMW 003A turbojet engines - by June of the same year. Assembly of experimental machines Hs 132 and Hs 132V2 was carried out on the basis of a repair plant in Göttingen.

The aircraft was made according to the scheme of a classical flying wing. There was no vertical tail, for control on the wing there were control surfaces - elevons and flaps, as well as air brakes (spoilers). The center section of the aircraft was welded from steel pipes, the wing consoles were made of wood, and the skin was made of plywood 17 mm thick. In serial production, it was planned to replace the plywood sheathing with a combined sheathing 15 mm thick. The combined sheathing had to be a three-layer composition: two outer layers of plywood 1.5 mm thick and an inner layer 12 mm thick, consisting of a mixture of sawdust and charcoal powder impregnated with glue. The charcoal was supposed to make the aircraft "invisible" on the radar screens.

The aircraft landing gear is tricycle, retractable into the fuselage. A suspension under the center section of two bombs of the SC 1000 type weighing 1000 kg each or a pair of fuel tanks of 1250 liters was provided. The armament of the aircraft was developed in two versions: four MK 108 cannons or two MK 108 cannons and two RB 50/18 cameras.

The first flight of the machine H | HM! took place | March 1944 in Göttingen. Flying behind a towing vehicle He 45 was piloted by H. Scheidhauer. Four days later, in the second flight behind the tug He 111, he climbed to an altitude of 4000 m and glided to the airfield. By the end of April, it became clear that the BMW engines would not be up to par for the planned first flight of the second car. As a result, it was decided to install Lito 004V engines on the aircraft, which had a slightly larger diameter. The car had to be urgently redone. In order to protect the wing from the hot gases of the engines, steel sheets were used, and there was a gap of 10 mm between them and the center section.

Although the H IXV2 aircraft was still in assembly, the RLM in July 1944 issued contracts for the construction of 20 pre-series aircraft to the Klemm and Gotha firms. Contract soon

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Klemm, due to its workload on the Me 163B aircraft, was transferred to Gotha. The assembly of serial aircraft, designated No 229, was planned at the factory in Friedrichsrode.

The second experimental machine H IXV2, equipped with engines, took off on December 18, 1944, but during the fourth test flight on February 18, 1945, the machine crashed, and the test pilot died. Despite the failure with the second experimental machine, the production of the No 229 aircraft (sometimes the designation Go 229 is still found) at Gotha continued. But 229V3 (H 229V3) was supposed to become a prototype of a single-seat production bomber fighter, machine No 229V6 - a prototype of a two-seat night fighter and training aircraft.

On April 14, 1945, American troops captured the factory in Friedrichsrod. It turned out that Ho 229V3 was already almost finished and prepared for testing, Ho 229U4 and Ho 229V5 were unfinished, and Ho 229V6 was in the initial stage of construction. In addition to Toro, nodes for 20 cars were ready. But 229U3 was later dismantled, transported to the USA and carefully studied by American aviation specialists.

Characteristics No 229V3 (H 229V3): crew - 1 man, power plant - 2 Jumo 004B turbojet engines with a thrust of 900 kgf, wingspan - 16.8 m and its area - 50.8 m², aircraft length - 7.45 m, height - 2.8 m, Bec empty - 4600 kg, maximum takeoff Bec - 9000 kg, maximum speed - 945 km / h, cruising speed - 685 km / h at an altitude of 10,000 m, rate of climb - 22 m / s, service ceiling - 16,000 m, flight range with drop tanks - 3150 km.

Junkers

Hugo Junkers, who became professor at the Aachen Higher Technical School in 1897, founded his first company two years later for the manufacture of engines, gas-fired boilers and fan equipment. In 1910, he patented the design of an aircraft with a thick

cantilever wing with metal skin, and five years later he built his first experimental self-propelled

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years. He first used corrugated metal skin in the design of the aircraft J 4 in 1917.

In 1919, a six-seat passenger aircraft J 13 was developed, the first all-metal aircraft, which was widely used in the 1920s. (more than 300 machines of various variants were built). In the mid 20s. Passenger planes G 23 and C 24 appeared. The last of the company's series of aircraft under the designation "C" was the G 38, a gigantic aircraft for those times, designed to carry 30 passengers. Two such aircraft were built, six more aircraft were built in Japan under license. G. Junkers retired in 1932, and in 1934 the firm came under government control. After the death of Junkers in 1935, the aircraft-building and engine-building industries were merged, and the company's products began to be listed under the designation "Ju". Junkers factories were located in Arnimswald, Aschersleben, Bernburg, Breslau, Gandau, Halbertstadt, Kethe-He, Leipzig Mockau, Leopoldschall, Magdeburg, Merseburg, Fritzlar and Schönebeck. By the end of the war, Junkers Flugzeug und Motorenwerke AG employed about 140,000 people.

from 38

The first flight of a passenger aircraft G 38 (tail code D-AZUR) took place on November 6, 1929. The power plant consisted of four engines: two Junkers L 88 internal engines with a power of 775 HP each. and two external "Junkers" L 8a with a capacity of 325 hp each. with., the crew of the aircraft consisted of seven people. Flight tests continued until May 26, 1931, soon the second model G 38 (D-APIS) appeared, equipped first with four G. 88 engines, and then with Jumo 204 engines. The second car, called "Hindenburg", could carry 34 passengers. In 1933 both G 38 aircraft were authorized to operate.

In 1936, the first car was seriously damaged in an accident, so it was decided not to restore it. On the eve of the war, the G 38 was requisitioned by the Luftwaffe and used in the Norwegian campaign. After the capture of France by the Germans, the C 38 aircraft (airborne

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code GF + GG) flew between Le Bourget and air bases in Germany, delivering fuel, food and ammunition to German troops. In the Balkans, it was used to transport the wounded, and supplied the 8th Air Fleet with food. At the end of May 1941, the aircraft was destroyed during a raid by British bombers.

Characteristics of S 38: crew - 7 people, power plant - 4 engines "Leto" 204 with a capacity of 750 hp each. With. (559 kW), wing span - 44.0 m and its area - 305.0 m², aircraft length - 23.2 m, height - 7.2 m, empty weight - 14,900 kg, takeoff weight - 24,000 kg, maximum speed - 225 km/h, cruising speed - 210 km/h, range - 1900 km, time to climb 1000 m - 5.0 min, service ceiling - 5500 m, number of passengers - 34.

yo 52

The first prototype Ju 52/3t, equipped with three Pratt-Whitney engines, took off in April 1931, and a year later aircraft deliveries to airlines began.

In 1935, Ju 52/3m-g3e bombers with BMW 132A-3 engines began to leave the assembly lines, and by the end of the year 12 bomber groups were armed with them. Summer 1936 20 cars

Ju 52/3m-g3e were transferred to Spain, where they were engaged in the delivery of infantry units and artillery from Morocco to support the Francoists. Since mid-August, some of the machines have become

be used as bombers. In November, they were joined by Ju 52 / 3m g4e aircraft from the 88th bomber group of the Condor Legion.

On September 1, 1939, the Luftwaffe had 552 Ju 52/3t aircraft. In addition to transport and training tasks, Ju 52/3m were also used as minesweepers under the designation Ju 52/3m (MS). At the end of June 1941, four air transport groups operated on the Soviet-German front, but by the end of the year five more specially formed groups were added to them. The last production variant was the Ju 52/3m-gl4e, which was produced from the autumn of 1943 until mid-1944, after which the production of the Ju 52 was discontinued. In total, since the beginning of 1939, 3225 aircraft have been produced.

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Characteristics of Ju 52/3m-g3e: power plant — 3 BMW 132A-3 engines with a power of 725 hp each. With. (541 kW), wing span - 29.3 m, its area - 110.0 m², aircraft length - 18.9 m, height - 5.55 m, empty weight - 5725 kg, maximum takeoff weight - 10 500 kg, maximum speed - 275 km/h at an altitude of 900 m, cruising speed - 245 km/h at an altitude of 900 m, climb time to a height of 3000 m - 17.5 min, service ceiling - 5900 m, range - 1300 km, armament - 2 MO 15 machine guns and up to 500 kg of bombs.

Zee 86

The first prototype of the Ju 86 aircraft took off on November 4, 1934. The fourth prototype was considered as a prototype for the Li 86B passenger aircraft. The Ju 86V4 first flew in May 1935, and in the summer it was handed over to Lufthansa for testing on passenger airlines.

The production of pre-production vehicles of the combat version A (13 vehicles) and the civilian version B (seven vehicles) began simultaneously at the end of 1935, and already in February 1936 the first Ju 86A-0 vehicles entered the Luftwaffe for military trials. At the end of spring, the first production car Li 86A-1 was produced with two Lipo 205C-4 engines with a power of 600 hp each. s., received by KG 152. The Ju 86B-0 aircraft entered service with Lufthansa, and soon six aircraft of the Ju 86ÿ-1 version joined them.

According to the results of tests in the troops, the Ju 86ÿ-1 bombers were modernized, the new version received the designation ÿi 860-1. At the end of 1937, five Ju 86D-1s were sent to Spain for combat testing. Version of the car with BMW 132E engines with a power of 810 hp. With. received the designation Ju 86ÿ-1, its deliveries began in the late summer of 1937. In late spring - early summer 1938, aircraft under the designation Ju 86G-1 began to roll off the assembly line. The Ju 86K version was exported to Sweden (37 vehicles), Portugal (10 vehicles), Austria (12 vehicles) and Hungary (66 vehicles). The Ju 867 version was supplied to Manchurian Airlines and South African Airlines.

In September 1938, the Luftwaffe was armed with 235 Ju 86 bombers of all modifications. However, to Ha

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At the beginning of the war, their number decreased to 30 machines of only one version of the Ju 866-1, which remained in [U / KS 1. In September 1939, a project was proposed to convert the Ju 86 into a high-altitude aircraft, which received the designation Ju 86ÿ. This aircraft was produced in two versions: the Ju 86P-1 high-altitude bomber, capable of carrying up to 1000 kg of bombs, and the Ju 86P-2 high-altitude reconnaissance aircraft with three automatic cameras.

In May 1942, several Li 86P-2 aircraft were transferred to the Mediterranean, where they became part of the reconnaissance squadron 2.(F) / Aufkl.Gr.123, based in Crete and performing reconnaissance flights over the North Africa. By August 1943 Squadron 2.

(F)/Aufkl. Gr. 123 was transferred to Greece, by that time it included only two incompetent Ju 86P-2 models. In the spring of 1942, a small number of Ju 86P-1s were converted

into the Ju 86R-2 high-altitude bomber, and the Ju 86P-2 into the Ju 86K-1 reconnaissance aircraft. In September 1942, squadron 14./KG.6 was formed with three Ju 86R aircraft.

At the end of 1942, 58 Ju 86 aircraft entered service with transport groups K.Gr.zbV 21 and K.Gr.zbV 22, formed to supply German troops encircled near Stalingrad. A month later, only 16 aircraft remained in service, after which the groups were disbanded, and the remaining Ju 86s were transferred to training units.

Characteristics of Ju 860-1: crew - 4 people, power plant - two BMW 1323 engines with a capacity of 865 hp each. With. (645 kW), wingspan - 22.5 m and area - 82.0 m², aircraft length - 17.5 m, height - 5.1 m, take-off weight - 8230 kg, maximum speed - 378 km/h at an altitude of 4000 m, cruising speed - 340 km/h at an altitude of 4000 m, service ceiling - 7700 m, range - 1400 km, armament - 3 MG 15 machine guns and up to 1000 kg of bombs.

Zch 87

A prototype of the Ju 87 "Stuka" dive bomber first flew in 1935, and in early 1937 an order for a serial batch of Ju 87A-1 machines followed. One of the first on the Ju 87A-1 began to re-equip I / StG 162, at the end of 1937 three aircraft of this group were sent to Spain

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to the Legion "Condor" for testing in combat conditions. In October 1938 they were joined by the first five Ju 87D-1 serial bombers.

By the middle of 1939, the monthly production of Ju 87 aircraft was 60 aircraft, by the beginning of the war nine groups of dive bombers had 336 Ju 87D-1 aircraft. In early September 1939, 4.(St)/Tr.Gr.186 received a small number of Ju 87D-0 aircraft. In April 1940, I / St.G 1 with Ju 87B-1 participated in the invasion of Denmark and Norway, in August 280 Ju 87 aircraft from St.G 1, St.G 2, St.G 77 and IV (St) /LG 1 took part in the Battle of England, losing 41 vehicles as a result. At the beginning of 1941, several groups of dive bombers were transferred to the Mediterranean, where they acted against British convoys, and then took part in hostilities in Yugoslavia and Greece.

At the very beginning of the war with the Soviet Union, seven groups of dive bombers were involved, which were part of the 2nd Air Fleet. In addition, the 5th Air Fleet in Norway included IV(St)/LG.1 (later renamed I/St.G 5) with 42 Ju 87s operating along the Murmansk railway. By the end of 1941, a version of the Ju 87D appeared on the Soviet-German front, and then a special anti-tank version of the Ju 87G with two 37 mm guns under the wing. However, from the beginning of 1943, large dive bombers began to rearm with Fw 190, by the autumn of 1944, only one group of day attack aircraft III / SG 2 with Ju 87 remained on the Soviet-German front. By the end of the war, the remaining Ju 87s were reduced in five groups of night attack aircraft, and the Ju 87G-1 vehicles were in special anti-tank squadrons 10. (Pz) / SG 2 and 10. (Pz) / SG 77. The total number of Ju 87s built was 5709 copies.

Characteristics of Ju 870-1: crew - 2 people, power plant - 1 Leto 211J-1 engine with a capacity of 1400 hp. With. (1044 kW), wingspan - 13.8 m, its area - 31.9 m², aircraft length - 11.5 m, height - 3.9 m, empty weight - 3900 kg, takeoff weight - 6600 kg, maximum speed - 410 km / h at an altitude of 3840 m, cruising speed - 320 km / h at an altitude of 5090 m, practical ceiling - 7290 m, range - 1535 km, armament - 2 machine guns MG 17, 1 double machine gun

MG 812 and up to 1800 kg of bombs.

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Ju 88

Conceived as a fast bomber in early 1936, the first Ju 88UT prototype flew for the first time on 21 December of that year. The three-seat aircraft was originally equipped with two OB 600A engines. Ten machines of the pre-production batch of Li 88A-O, which had a crew of four, were launched in 1939.

The first Ju 88A-1 aircraft entered the specially created unit "Erprobungskommando 88", on the basis of which the I / KG 25 group was formed in August 1939. The following month, IKS 25 was renamed IKS 30, this group first used Ju 88A-1 to attack British ships on 26 September. By the time of the German invasion of Norway, seven groups from LG I, KG 30 and KG 51 had Ju 88A aircraft in their composition, the production of which reached 300 machines per month. Among them were Ju 88ÿ-2 with launch rocket boosters, Ju 88ÿ-4 with increased wingspan, reinforced landing gear and Leto 211ÿ-1 engines with a power of 1340 hp. With. (1000 kW), as well as the generally similar Ju 88ÿ-5. All these versions of the Ju 88A took part in 1940 in the summer "Battle of England" and the winter operation "Blitz" as part of 17 groups, of which 14 groups were bombers. The main version of the Ju 88A, which included many options (up to Ju 88A-17), operated in 1941 over the Mediterranean Sea, bombing harbors and Allied ships. Ig | also supported Rommel's corps in North Africa.

For the invasion of the USSR, bomber squadrons KG 1, KS 3, KS 30, KG 54, KG 90, KG 91 and KG 92 were prepared, which included 493 Ju 88 aircraft. A month after the start of the war with the Soviet Union 130 bombers from the KO Zi KG 54 made a massive raid on Moscow. In large numbers, Ju 88 bombers from KG 26 and KG 30 were used to attack allied convoys in the Arctic, in total they sank 27 merchant ships and 7 warships.

At the beginning of the summer of 1940, pre-production machines of the Ju 88B version with more powerful BMW 801 MA engines began to roll off the assembly line. According to the test results, most of the Ju 88V-0 machines were converted into long-range reconnaissance aircraft, which were supplied to the reconnaissance group of the Supreme

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command of the Luftwaffe. Then a fighter version of the ÿu 88ÿ was developed, in particular, the ÿu 88ÿ-2 aircraft were in service with a group of long-range night fighters II / NJG 1, formed in July 1940 to repel the night-HblX raids of British bombers on Germany.

At the beginning of 1940, a Ju 88D reconnaissance aircraft appeared in the long-range reconnaissance groups, which had an additional fuel tank in the front bomb bay, air brakes were removed and cameras were installed - Rb-50/30 for operation at altitudes up to 8500 m Rb-20/30 for operation at altitudes below 2000 m.

The prototype Ju 88PV1, which was a modified Ju 88A-4 aircraft, was equipped with a 75 mm KwK 39 ventral cannon. This was followed by a small batch of Ju 88P-1 attack aircraft (about 40 vehicles), equipped with additional armor and a Pak 40 75 mm semi-automatic anti-tank gun. The attack aircraft were sent to the Soviet-German front and distributed between two experimental units that practiced methods of combating armored vehicles and the sixth squadron of the Ka 3 bomber squadron. 2 with two BK 3.7 37mm ventral cannons. These aircraft, which, however, lost in maneuverability, were used in the Erprobungskommando 25 as tank destroyers. Li 88R-3 aircraft, which had reinforced cockpit armor and two VK 18 37 mm anti-aircraft guns, were armed with one squadron each as part of groups of night attack aircraft - NSGr 1, NSGr 2, NSGr 4 (on the Soviet-German front), NSGr 8 (in Norway) and NSGr 9 (in Italy). The Ju 88ÿ-4 aircraft was equipped with one 50-mm VK 5 cannon, and one of the Ju 88ÿ-4 had

launcher with 22 RZ 65 65 mm rockets. It was also planned to install 88-mm cannons from a submarine on some vehicles, but such vehicles were not delivered to the troops.

By the end of the war, many surplus Ju 88s were involved in the Beethoven program, which began the development of the Mistel aircraft linkages. In July

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In 1943, the Junkers firm was given an assignment to prepare 15 copies of the Mistel-1 combat system as part of the Ju 88A (projectile aircraft) and BE 109E (control aircraft).

In the spring of 1944, as part of the IV group of the bomber squadron KO 101, a special squadron was formed, which began to receive the Mistel-1. Ju 88A-4 vehicles with a conventional nose were used for training the flight crew, but almost all equipment was removed from the cockpit, the training vehicles were designated Mistel \$-1. The nose of the Ju 88A-4 was easily detached using quick-detachable bolts and replaced with a warhead with a shaped charge weighing 3800 kg. The fighter was mounted on top of two front rigid struts and one rear sprung strut. Two options for the combat use of the bundle were envisaged. According to the first option, takeoff and flight to the target was carried out only with the engines of the lower machine running. The engines of the upper machine were started when approaching the target, after which the pilot transferred the bunch into a gentle dive and unhooked. The flight release mechanism was as follows. The pilot of the control plane released the rear pillar, which, leaning back along the fuselage of the bomber, pressed the limit switch, which opened the locks of the main pillars. The freed bomber swooped down on the target, and the control plane left for the base. The second option provided for the joint operation of the engines of both aircraft until the moment of undocking, while the engine of the upper aircraft was fed with fuel from the carrier. On the night of June 24, 1944, the Mistel squadron from M/Ka 101 for the first time attacked Allied ships at the mouth of the Seine River.

Other variants of the Mistel were also developed. For example, "Mistel-2" was a combination of aircraft projectile Ju 886-1 and control aircraft Fw 190A-6 or Fw 190E-8. In 1944, 75 Ju 886-1 bombers that were under repair were converted into Mistel-2. The first sample took off in November of the same year, it was planned to deliver 125 copies. Mistel-3 was a modernization of Mistel-2, which consisted in installing an additional landing gear under the fuselage of the lower aircraft, which was dropped after take-off. The chassis reinforcement was not caused

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how many accidents of "Mistel-2" due to breakdowns of the racks during takeoff from poorly prepared airfields.

In October 1944, Group IV of the KG 101 bomber squadron was transferred to 11/KS 200, armed with 60 Mistels. In December 1944, it was planned to carry out a massive attack on the British naval base in Scapa Flow, but due to bad weather conditions, the attack did not take place. Then the German command redirected the Mistels to use them as part of the Iron Hammer operation, which was scheduled for March next year. The essence of the operation was a one-time bombing of power plants located in the European part of the Soviet Union in order to paralyze the defense industry. For strikes against hydroelectric power plants, special drop-off aircraft mines "Sommerballon" were developed, which were supposed to be delivered by the flow of water to hydroelectric turbines and put them out of action. The execution of the Iron Hammer operation required about 100 Mistels. According to the scenario of the planned operation, the Mistels were supposed to take off from airfields in East Prussia, but in March these airfields were captured by the advancing Soviet troops. In connection with this circumstance, P / COP 200 received an order to prepare their Mistels

for attacks on bridges on the rivers Oder, Neisse and Vistula. Since April, the KS 30 bomber squadron, partially re-equipped on the Misteli, has been connected to these hostilities.

A variant of the Mistel-3 was developed, which was intended for reusable use as an ultra-long fighter. At the same time, the lower aircraft was piloted by its own crew, equipped with a radar and a MG 131 machine gun in the rear of the cockpit, two drop fuel tanks with a capacity of 900 liters each were suspended to achieve maximum range.

Mistel-4 was a combination of Ju 88G-7 and Ta 152H fighter. Until the end of the war, about 250 copies of the Ju 88G-7 were converted, up to 50 copies of these projectiles were captured by the Allied forces in the Merseburg area.

The production of Ju 88 aircraft was stopped at the beginning of 1945, for the entire period of production 14,676 aircraft were produced.

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Characteristics of Ju 68A-1: crew - 4 people, power plant - 2 Leto 211B-1 engines with a capacity of 1200 hp each. With. (895 kW), wingspan - 18.4 m and its area - 52.5 m², aircraft length - 14.35 m, height - 5.3 m, empty weight - 7700 kg, maximum takeoff weight - 10 400 kg, maximum speed - 450 km / h at an altitude of 5500 m, cruising speed - 350 km / h at an altitude of 5300 m, service ceiling - 9800 m, range - 1690 km, armament - 3 MO 15 machine guns, up to 1400 kg of bombs in the bomb bays and up to 1000 kg of bombs under the center section.

Ju 160

In 1934, the Junkers company developed a project for a light passenger and mail aircraft Ju 160, which was a further development of the Ju 60 aircraft. In the prewar years, improved versions of the Ju 160 and Ju 1600 were developed, the total number of aircraft built was 48 examples. With the outbreak of war, all Ju 160 aircraft were requisitioned for the needs of the Luftwaffe and were used for communications, reconnaissance, as well as the transport of people and goods. In the reconnaissance variant, the aircraft was equipped with an MG 15 machine gun.

Characteristics of Ju 160A: crew - 2 people, power plant - | BMW 132E engine with 660 hp. With. (492 kW), wing span - 14.3 m and its area - 34.8 m², aircraft length - 12.0 m, height - 3.45 m, empty weight - 2320 kg, maximum takeoff weight - 3450 kg, maximum speed — 340 km/h near the ground, climb time to a height of 1000 m — 3.7 min, service ceiling — 5200 m, range — 1100 km, number of passengers — 6.

Ju 188

As a further development of the Ju 88 bomber, the company developed the Ju 188 aircraft, the prototype of which first flew in December 1941. From March 1942, serial production of the Ju 188A, J and 1880 versions (D-2 was a reconnaissance aircraft) and a torpedo bomber began. Ju 188E.

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The first Ju 188Es were delivered to one of the groups of squadron KO 6, they began to be used as heavy fighters over England in October 1943. in KG 26 and KG 66. By January 1944

Ju 188s were used in reconnaissance squadrons 4.(E)/11, 1. and 3.(E)/22 and 3.(E)/121, and a year later in squadrons 3./ FAGr.122, 3. /FAGr.121 and 3. n 6./FAGr.122. A total of 1,100 Ju 188 aircraft were built during the war years.

Characteristics of the Ju 188E-2: crew - 4 people, power plant - 2 BMW 801 engines) with a capacity of 1700 hp each. With. (1268 kW), wingspan - 22.0 m, its area - 56.0 m², aircraft length - 14.9 m, height - 4.44 m, empty weight - 9860 kg, maximum takeoff weight - 14

470 kg, maximum speed - 500 km/h at an altitude of 6000 m, climb time to an altitude of 6000 m - 17.6 min, service ceiling - 9300 m, range - 1950 km, armament - three MO 131 machine guns and 3000 kg of bombs in internal compartments or two 800-kg LT lb torpedoes under the wing.

Ju 252

The Ju 252 transport aircraft was a further development of the Ju 52/3t. The wingspan and fuselage length of the new aircraft were increased, a cargo ramp was installed in the rear fuselage, which facilitated the process of loading and unloading. The construction of a batch of three experimental aircraft began in July 1940, the first machine took off in October of the following year. At the end of 1942, 11 vehicles of the Ju 252A-1 series were delivered to the Luftwaffe — some to the 290th Air Transport Squadron, and some to the 1/KS 200, where they were used to drop secret agents into North Africa.

Characteristics of Ju 252A-1: power plant - 3 Leto 211F engines with a capacity of 1350 hp each. With. (1007 kW), wing span - 34.1 and its area - 122.6 m², length of the aircraft - 25.1 m, height - 5.75 m, empty weight - 13,100 kg, maximum takeoff weight - 24 000 kg, maximum speed - 439 km/h at an altitude of 5800 m, range - 3980 km, service ceiling - 6300 m, armament - | MG 131 machine gun and 2 MO 15 machine guns.

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Ju 287

At the end of 1942, the RLM considered that the Ju 250 and Me 264 morale-HO aircraft being developed as the Ateyka-Bomber were obsolete. The terms of reference for the development of a long-range jet bomber equipped with a Jumo 004B turbojet engine and capable of carrying 4,000 kg of bombs at a range of up to 7,000 km with a maximum speed of 900 km/h were issued.

The Junkers firm was involved in this development, which began designing a bomber under the designation Ju 287 in the summer of 1943. As a result of tests in aerodynamic tubes of models of various layouts, a variant of the machine with a negative sweep wing was chosen. To reduce the construction time of the experimental machine, on which it was supposed to study the effect of various flight modes on the aerodynamic characteristics of the negative sweep wing, the company's specialists used ready-made parts and assemblies from serial aircraft. The fuselage was taken from the He 177A3, the tail unit from the Ju 388, the two-wheeled nose landing gear from the captured American B-24 bomber, the wheels of the main landing gear from the Ju 352. Four Jumo 004 turbojet engines were installed on the aircraft: two on the sides in the forward fuselage and two under the wing, under the engine nacelles, launch boosters were suspended. The first flight of the experimental machine Ju 287M1 took place on August 16, 1944. The results of flight tests, during which the maximum speed of 650 km/h (dive mode) was reached, were used in the construction of the second experimental machine.

While the flight tests of the first prototype were underway, in the fall, G. Goering issued an order to suspend work on the Ju 287. At the meeting that took place after that, the status of work on the Ju 287 and the competitor to the Arado project Ag E.555 was discussed. As a result of three days of discussion, the unsatisfactory state of affairs with the development of long-range bombers was noted. Representatives of firms present at the meeting were ordered to submit revised designs by March 1945.

Firm "Arado" in December 1944 stopped work on the project Ag E.555, and the firm "Junkers" in early March of the following year presented a modified second experimental machine Ju 287V2 (Ju EE 131) with six turbojet engines BMW 003A under wing

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(three in one bundle) as a prototype of the A-1 series. The design speed was 800 km/h, the bomb load was 4,000 kg, and the takeoff weight was 21,200 kg. On machines of the B-1 series it was assumed

installation of four HeS 011 gas turbine engines under the wing, on B-2 series machines - two BMW 018 turbojet engines. Shortly before the end of the war, during the bombing of the Junkers plant by allied aircraft, the first prototype aircraft was damaged, and the unfinished second Ju 287V2 aircraft was captured by Soviet troops .

Characteristics of the Ju 287M1: crew - 2 people, power plant - 4 turbojet engines Leto 004B with a thrust of 900 kgf, wingspan - 20.11 m, wing area - 58.3 m², aircraft length - 18.3 m, empty weight - 12510 kg , maximum takeoff weight - 20,000 kg, maximum speed - 559 km/h at an altitude of 6000 m, range - 1500 km, service ceiling - 10,800 m.

Ju 288 _

The development of the Ju 288 medium bomber, intended to replace the Ju 88 aircraft, began in 1939. A prototype machine equipped with two BMW 801A engines with a power of 1600 hp each. s., first took off in January 1941.

The production of an experimental batch of machines in the Ju 288A, Ju 288B and Ju 288C variants began the following year. 22 aircraft had already been built, but in June 1943 the ministry decided to terminate the program, and all built prototypes were handed over to the Luftwaffe. There they, equipped with a hanging container with a 50 mm VK 5 (KUK 39) cannon, operated until the end of the war under the designation Ju 288E (anti-tank version).

Characteristics of the Ju 288C-1: crew - 4 people, power plant - 2 DB 610A / B engines with a capacity of 2950 liters. With. (2200 kW), wing span - 22.65 m and its area - 64.6 m², aircraft length - 18.1 m, height - 4.5 m, empty weight - 13,400 kg, take-off weight - 22,450 kg , maximum speed — 655 km/h at an altitude of 6800 m, range — 2600 km, service ceiling — 10,400 m, armament — 6 machine guns MG 131, 1 cannon MO 151 and bomb load - 3000 kg in internal compartments and 2000 kg on external suspensions.

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Ju 290 |

The Ju 290, which participated in the America-Bomber competition, was a remake of the mass-produced Ju 90 passenger aircraft. Compared to its predecessor, the Ju 290 received an additional fuselage section 2 m long and a reinforced wing center section. Spaced keels instead of an oval shape began to have a trapezoidal shape, and BMW 801 engines were installed instead of BMW 132 engines. Two gondolas were installed under the fuselage to accommodate remotely controlled cannon weapons, as well as nose, tail, upper and lower gun towers. The landing gear consisted of two main two-wheeled struts located under the nacelles of the internal engines, and a tail wheel.

The first experimental aircraft Ju 290V1 began flight tests in August 1942, in October the first aircraft from the pilot batch of Ju 290-0 was produced. Serial machines Ju 290A-1, produced in the transport version, could carry 48 people. At the beginning of 1943, a version of the Ju 290A-2 naval reconnaissance aircraft began to be produced, equipped with naval radio equipment, a FuG 200 search radar and an additional HDL 151 gun turret.

At the same time, the long-range reconnaissance group FA.Gr. was formed. 5 based at Mont de Marsano in France. At the end of the summer of 1943, three Ju 290 A-2s were delivered to the first squadron of this group. They were followed by five Ju 290A-3s with more powerful BMW 8010 engines, followed by five Ju 290A-4s with improved gun turrets.

In November, the second squadron of the group began to operate in the Atlantic, the task of which was to detect allied convoys and transmit messages about them to German submarines. 11 Ju 290-5 vehicles with reinforced armor and more powerful cannon armament were delivered to FA.Gr. 5 at the beginning of 1944. Together with them, 12 vehicles of the Ju 290A-7 anti-ship version were delivered, capable of carrying three Hs 293 missiles or planning

EX 1400 bombs. A FuG 200 radar and a 20-mm cannon were installed in the forward fuselage. In the Ju 290-9 version, only three vehicles were built, they had reduced small arms.

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increased fuel capacity, which made it possible to reach a flight range of 8,000 km.

Then the production of the Ju 290B bomber version was mastered, which was distinguished by more powerful small arms and capable of carrying 1000-kg bombs, as well as Hs 293 or Hs 294 missiles.

After the Germans lost their bases in France, the long-range reconnaissance group FA.Gr. 5 in August 1944 was transferred to the Soviet-German front, where it was used for transport operations. Some of the Ju 290s even made non-stop flights to Manchuria, delivering special cargo to the Japanese and returning with raw materials vital to Germany. The total number of Ju 290s built was 65.

Characteristics of the Ju 290A-5: crew - 9 people, power plant - 4 BMW 801D engines with a capacity of 1700 hp each. With. (1268 kW), wingspan - 42.0 m and its area - 203.7 m², aircraft length - 28.64 m, height - 6.8 m, take-off weight - 50,500 kg, maximum speed - 440 km/h At an altitude of 6000 m, climb time to 1000 m is 4.2 min, range is 6150 km, service ceiling is 6000 m, armament is 6 MG 151 cannons and one 13 mm machine gun.

yo 352

The modernization of the Ju 252 project was completed in 1943, the first flight of the prototype Ju 352 Herkules took place | October of the same year. The installed rear cargo ramp simplified the process of loading heavy equipment and cargo into the fuselage. The aircraft design was based on non-strategic materials, the power plant consisted of three Vgato 323R-2 engines.

"The first machine from the ordered pre-production batch of Ju 352A-0 caMolets was delivered to the Luftwaffe in November 1943, three more aircraft were delivered in December. All Ju 352A-0 machines differed from experimental aircraft in the installation of defensive weapons. In February 1944, the first two Ju 352A-1 production vehicles entered service.

Deliveries of Ju 352 began to increase, but due to the changed military situation in September 1944,

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leadership was terminated. The total output was 10 pre-production Ju 352A-0 and 33 Ju 352A-1 machines. Two Ju 352 aircraft were in service with the 1/KS 200, most of this type of aircraft at the end of 1944 was part of the Reich command transport group, which was used at the end of the war to supply the encircled German Bock. On April 25, 1945, 23 Ju 352A vehicles still remained in this group, but almost all of them were destroyed by the Germans when approaching the allied troop airfield.

Characteristics of Ju 352A-1: power plant - 3 Bramo 323K-2 engines with a capacity of 1200 hp each. With. (895 kW), wing span - 34.2 m and its area - 128.3 m², aircraft length - 24.6 m, height - 5.74 m, empty weight - 12,500 kg, take-off weight - 19,600 kg, maximum speed - 370 km/h at an altitude of 5000 m, cruising speed - 300 km/h at an altitude of 5000 m, range - 3000 km, service ceiling - 6000 m, armament - | cannon MG 151.

yo 388

In September 1943, the modernization of the Ju 188 aircraft into the Ju 388 aircraft began, it was planned to create three main variants - the Ju 388J high-altitude fighter-interceptor, the Ju 388K high-altitude bomber and the Ju 388L high-altitude reconnaissance aircraft.

First of all, work began on the Ju 388L reconnaissance aircraft. To speed up the assembly process, the prototype Ju 388LV1 aircraft was converted from the Ju 188T serial machine. According to the results of testing a prototype, 10 more Ju 188L-1 aircraft were converted into pre-production Ju 388L-0 aircraft. In August 1944, the first pre-production vehicle was delivered to the troops, and already in October, deliveries of serial Ju 388L-1 vehicles began. A total of 47 serial reconnaissance aircraft were delivered by the end of the year, most of which were in service with the air group of the Luftwaffe High Command FA.Gr.Ob.dL. Before the termination of the program in early 1945, three more Ju 388J and Ju 388K bombers, but they never entered the troops.

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Characteristics of Ju 388L-1: crew - 3 people, power plant - 2 BMW 801 T7 engines with a capacity of 1800 hp each. With. (1342 kW), wingspan - 22.0 m and its area - 56.0 m², aircraft length - 15.2 m, height - 4.35 m, maximum takeoff weight - 14,700 kg, maximum speed - 613 km / h at an altitude of 12,300 m, climb time to a height of 11,000 m - 30.0 minutes, service ceiling - 13,450 m, range - 3460 km, armament - 2 machine guns MG 131.

Ju 390

The Ju 390 was a six-engine version of the Ju 290 with increased span and wing area, the length of the aircraft was also increased by inserting a fuselage section just behind the wing. BMW 801D engines were used as engines on three optional machines, and the installation of more powerful BMW 801E engines was envisaged on serial machines. The chassis was installed five-wheel with two wheels on each of the four main racks, which were located under the engine nacelles of the internal and medium engines. Armament compared to Ju 290, was strengthened, four holders were installed under the wing for hanging 1800-kg bombs or rockets Hs 293, Hs 294 or EX 1400.

The first experimental machine, Ju 390.1 (GH + UK), assembled at the company's plant in Dessau, first took off in August 1943. It was flight tested as a long-range transport aircraft, but it was also intended to be used as an air tanker for Ju 290 aircraft. The second machine, Ju 390V2, built at the company's plant in Bernburg and took off two months later, was intended for testing as a naval reconnaissance aircraft. Compared to the first machine, it had a longer fuselage and was equipped with a FuG 200 Hohentel locator, defensive armament was similar to that of the Ju 290A. In January 1944, the vehicle entered military trials at the U long-range reconnaissance group based in Mont-de-Marsan, south of Bordeaux. After several training flights, the Ju 390U2 made a reconnaissance - HbIM flight to an area located 20 km from the coast.

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USA north of New York, after which he returned to his base.

The Ju 390V3 (prototype of the serial Ju 390A) was planned to be completed in the summer of 1944 as a bomber, but its construction was not completed.

Characteristics of the Ju 390A-1 aircraft: power plant - 6 BMW 801D engines with a capacity of 1700 hp each. With. (1267 kW), wing span - 50.35 m and its area - 253.7 m², length - 34.2 m, height - 6.9 m, take-off weight - 75,600 kg, maximum speed - 502 km / h, practical ceiling - 6000 m, range - 9650 km, armament - 4 machine guns MG 131, 4 cannons MG 151, 7200 kg of bombs or 4 rockets (Hs 293 or Hs 294).

Light gliders

The Luftwaffe was armed with a large number of light gliders, developed on the instructions of the RLM by various aviation groups, flight schools and individual designers. These gliders were used for various purposes: initial training of pilots, performance of sabotage missions, training of pilots of Me 163 and Ba 349 rocket planes, flight tests of units and control systems of promising aircraft, etc. A large number of various gliders were being prepared in 1940 g. to participate in the planned operation "Seelowe" ("Mopoc- Lion") against England. Below is a far from complete list of light gliders.

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AA ca Q = T AFH 4 Eppmann & Vollmer 91 V 5 EEC, Berlin 76 V 6 EEC, Berlin 68 V 8 EEC, Berlin 68 C 11 FAG, Chemnitz 72 Condor III X. Dittmar 75 DFS-Fafnir P |A. Lippisch 75

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sa ra Old DFS-Habicht |X. Jacobs = DFS-Kranich |X. Jacobs | 70 DFS-Olympia |X. Jacobs 69 DFS Präsident |A. Lippisch 60 DFS-Reicher |X. Jacobs - R 280 FFG, Darmstadt 56 R 30 HES, Darmstadt 72 O 31 FFG, Darmstadt 67 E3 FAG, Esslingen 70 FVA 9 72 EMA 106 85 FVA 11 | | 85 FS 16 FFG, Stuttgart 65 FS 18a FFG, Stuttgart 70 Grunau 7 B. 55 Gö 1 B. 60 Gö 3 B. 85 Gö 4 V. Hirti W. Hütter 70 So 17 U. Hütter 60 N 28 PI V. Hütter U Hütter 60 H IIL B.iR. Hortens — H IILb B. and R. Hortens — Kolibri-B G. Blessing | 70 Mu 10 E. Scheibe 70 Mi 13 E. Scheibe 70 Mi 134 E. Scheibe 66 Mi 17 E. Scheibe 75 Rhoadler H. Jacobs me Koprizzaga |X. Jacobs - K 2 F. Raab 54 Schwalbe II b. Gumpert | 72 5C 38 NSFK 60

Trophy aircraft

During the war, the Luftwaffe was armed with captured aircraft from different countries - Czechoslovak (Ba-122, B5-122, S-328, B-534, etc.), Polish (PZL R-7a, PZL P-11, PZL

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P-37B, PZL P-43A, PWS-26, RWD-8), French (MS.406, M5.410 and D.520), American (B-17, B-24, B-26, DC-2, P-38, P-47, R-51), English (Gladiator, Hurricane, Spitfire), Soviet (Il-2, Il-4, I-153 and Yak-1) and etc.

American aircraft

B-17

In total, during the war years, the Germans captured several dozen American B-17 bombers. As a rule, the Germans got them after a forced landing of a damaged vehicle returning from bombing. Seven of these machines (five B-17E and two

B-17G) after refurbishment and testing in Rechlin, they were sent to a special Luftwaffe unit - the KS 200 squadron and the 2./V.O.b.d.L squadron (this unit had the unofficial name "Zirkus Rosarius"). The aircraft received German markings and were repainted in a special night camouflage, in addition to this, some equipment was added - an AZG barometric altimeter and a FuG 101 radio altimeter.

In the KG 200 squadron, B-17 aircraft were operated in two squadrons based at the Finsterwalde air base: combat use was carried out in the first squadron, training in the fourth. The B-17 flew sabotage groups to the Soviet Union, Poland, Greece, Italy, France, Belgium, Holland, Ireland, the Middle East and Africa. The first two captured B-17s were lost in May-June 1944 while performing combat missions, the next aircraft was heavily damaged on November 19 of the same year. The fourth aircraft was shot down during a flight near the Spanish-French border on February 9, 1945, and the last aircraft was shot down on March 2.

Characteristics of the B-17G: crew - 10 people, power plant - 4 Wright Cyclone K-1820-97 engines with a capacity of 1200 hp each. With. (895 kW), wing span - 31.62 m and its area - 131.92 m², aircraft length - 22.78 m, height - 5.82 m, empty weight - 16,391 kg, maximum takeoff

weight -

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32 660 kg, maximum speed - 462 km/h at an altitude of 7620 m, time to climb 6096 m - 37.0 min, service ceiling - 10 850 m, range - 3220 km, armament - 4 twin 12.7-mm machine guns, 4 single 12.7 mm machine guns and up to 7983 kg of bombs.

P-38

Captured P-38 Lightnings were part of the Zirkus Kozarius, several vehicles were used as reconnaissance vehicles, for example P-38G with tail code 19+XB. At least one P-38 was used by the Italians to intercept allied bombers, with this aircraft Colonel AH-zhelo Tondi managed to shoot down one B-17 bomber.

Characteristics of the P-38L: crew - 1 person, power plant - 2 Allison V-1710-111/113 engines with a capacity of 1475 hp each. With. (1100 kW), wing span - 15.85 m and its area - 30.42 m², aircraft length - 11.52 m, height - 2.99 m, empty weight - 5806 kg, maximum takeoff weight - 9798 kg, maximum speed - 667 km/h At an altitude of 7620 m, time to climb 6095 m - 7.0 min, service ceiling - 13410 m, range - 724 km, armament - one 20-mm cannon, four 12.7-mm machine guns and two 726-kg bombs under the wings.

P-47

The Zirkus Rosarius unit had several P-47 Thunderbolt fighters. The first of them fell into the hands of the Germans under the following circumstances. Lieutenant V. Roach of the 355th Fighter Group escorted B-17 bombers on November 7, 1943 in his P-47 aircraft. In conditions of poor visibility and complete exhaustion of fuel, Roach, having found the nearest airfield, made an emergency landing. It was only when he got off the plane that he realized that he was surrounded by the Germans. Lieutenant Roach spent the remainder of the war in the Stalag Pilot POW camp. Luft.

It is, and the Germans got the first intact copy of the P-47 aircraft.

Characteristics of the P-47D-25: crew - 1 man, power plant - 1 Pratt & Whitney engine R-2800-59 with a capacity of 2300 hp. With. (1716 kW), wingspan - 12.43 m and its area - 27.87 m², aircraft length - 11.01 m, height - 4.32 m,

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Empty weight - 4536 kg, maximum takeoff weight - 8800 kg, maximum speed - 689 km / h at an altitude of 9145 m, climb time 6095 m - 9.0 min, service ceiling - 12 800 m,

range - 2028 km, armament - eight 12.7-mm machine guns and two 454-kg bombs.

P-51

Zirkus Rosarius also included several P-51 Mustang aircraft. One of them was used by Hungarian pilots in Neuruppen to practice the tactics of conducting air combat with Fw 190 aircraft against the P-51.

Characteristics of the P-51D: crew - 1 man, power unit - HOBKa — 1 Rolls-Royce Merlin V-1650-7 engine, 1490 hp. With. (1112 kW), wingspan - 11.28 m and its area - 21.65 m², aircraft length - 9.85 m, height - 3.71 m, empty weight - 3232 kg, maximum takeoff weight - 5262 kg, maximum speed — 704 km/h at an altitude of 7620 m, time to climb 9145 m — 13.0 min, practical ceiling — 12,770 m, range — 3347 km, armament — six 12.7-mm machine guns and two 454 kg bombs or six 127 mm rockets.

English planes

55.37 "Gladiator"

In the 30s. Latvia, Lithuania and Estonia purchased aircraft 55.37 "Gladiator" of the English company "Gloucester". After the entry of the Baltic republics into the USSR in 1940, the vehicles entered service with the Soviet Air Force. At the beginning of the Great Patriotic War, the planes were captured by the advancing Germans. The cars that were to be repaired were restored, after which they were assigned German numbers and applied the corresponding identification marks. Until the end of 1944, the vehicles were mainly used as gliders and towed targets for practice shooting. A small part of the machines was used in the Ergänzungsgruppe (S) I flight training group, based in Langendiebach.

Characteristics of Gladiator G: Crew - 1 man, power plant — 1 Bristol engine. Mercury" USHA/A5 power

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capacity 830 l. With. (619 kW), wing span - 9.83 m and its area - 30.01 m², length of the aircraft - 8.36 m, height - 3.53 m, empty weight - 1562 kg, takeoff weight - 2206 kg, maximum speed — 417 km/h, rate of climb near the ground — 677 m/min, service ceiling — 10,210 m, range — 715 km, armament — four 7.69 mm machine guns.

Spitfire

A significant part of the captured aircraft were British Spitfires of various modifications - Mk I, Mk V, Mk IX, PR.VI, PR.XI. Most of them were in service with the Zirkus Rosarius unit; these Tbl aircraft were used to train pilots and develop night interception techniques.

Characteristics of "Spitfire" Mk VB: Crew - 1 person, cH - fishing installation - 1 Rolls Royce Merlin 45/46/50 engine with a capacity of 1440 liters. With. (1074 KBr), wingspan - 11.23 m; speed — 602 km/h at an altitude of 3960 m, time to climb 6095 m — 7.5 min, service ceiling — 11,280 m, range — 756 km, armament — two 20 mm guns and four 12.7 mm guns machine gun.

dutch planes

Among the captured aircraft used by the Luftwaffe were the Dutch Fokker T-USh and Fokker GI. The T-USh planes were used by the Germans mainly for patrols in the Mediterranean, while the GI machines were used for pilot training.

Characteristics of the Fokker T-USH: crew - 3 people, engine installation - 2 Wright R-975-E3 engines with a capacity of 440 hp each. With. (328 kW), wing span - 18.0 m and its area - 44.0 m², aircraft length - 13.0 m, height - 5.0 m, empty weight - 3100 kg, takeoff weight - 5000 kg, maximum speed — 285 km/h at an altitude of 3000 m, cruising speed — 220 km/h, service ceiling — 6800 m, range —

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2050 km, armament - two 7.9-mm machine guns and 606 kg of bombs or 1 torpedo.

Characteristics of the Fokker C-IA: crew - 3 people, engine installation - 2 engines "Mercury" USH with a capacity of 330 hp each. With. (246 kW), wingspan - 17.2 and its area - 38.3 m², aircraft length - 11.5 m, height - 3.4 m, empty weight - 3323 kg, takeoff weight - 4790 kg, maximum speed - 475 km / h at an altitude of 2750 m, climb time 6000 m - 8.9 minutes, service ceiling - 9300 m, range - 1520 km, armament - nine 7.9-mm machine guns and 400 kg of bombs.

Polish aircraft

By 1939, the Polish Air Force was armed with the following aircraft: PZL R-7ai and PZL R-11 fighters, PZL R-37Bi and PZL P-23B bombers, K-XSh reconnaissance aircraft and RWD-8 liaison aircraft.

PZL P-7a

After the attack on Poland in September 1939, the Germans captured about a hundred airworthy P-7a fighters developed by PZL ("Panstwowe Zaklady Lotnicze"). About 50 of them were sent to Romania at the end of September 1939, and the rest of the aircraft were used for pilot training at the Luftwaffe flying school in Schleissheim.

Characteristics PZL R-7a: crew - 1 man, power plant - 1 engine "Jupiter" UPE with a capacity of 520 liters. With. (388 kW), wing span - 15.57 m and its area - 17.9 m², aircraft length - 6.98 m, height - 2.69 m, empty weight - 1090 kg, takeoff weight - 1476 kg, maximum speed - 327 km / h at an altitude of 4000 m, climb time of 4000 m - 6.6 minutes, service ceiling - 8500 m, range - 600 km, armament - two 7.7-mm machine guns.

PZL P-37B

The Germans captured 14 combat-ready PZL P-37 "Los" ("Moose") bombers, which had been in service with the Polish BBC since 1938, but the Polish Resistance fighters

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succeeded in destroying twelve of them. The remaining two PZL P-37B vehicles received German identification marks and were transferred to the test center in Rechlin. One of the cars crashed in May 1940 during testing, the crew died. From the unfinished series of R-37B aircraft, the Germans completed a little more than 20 aircraft, which were then handed over to the Romanian Air Force.

Characteristics of the PZL R-37B: crew - 4 people, power plant - 2 Pegasus XX engines with a capacity of 925 hp each. With. (690 kW), wing span - 17.95 m, its area - 53.5 m², aircraft length - 12.92 m, height - 5.09 m, empty weight - 4280 kg, takeoff weight - 8900 kg, maximum speed - 445 km/h, rate of climb near the ground - 285 m/min, practical ceiling - 5900 m, range - 1500 km, armament - three 7.9 mm machine guns, one 7.7 mm machine gun and up to 2580 kg of bombs.

PZL P-23/P-43A

As trophies, two PZL P-43 Karas (Karas) aircraft (development of the PZL P-23 bomber and reconnaissance aircraft) with serial numbers 1737 and 1740 were captured. In the first half of 1940, the Ho 1737 aircraft was transferred to Bulgaria, which in 1937 bought a batch of 12 P-43s from Poland. The second captured car received German identification marks and passed flight tests in Rechlin. After completion of the tests, it was also transferred to Bulgaria.

Characteristics of the PZL R-43: crew - 3 people, power plant - | engine "Gnome Rhone" 14M1 with a capacity of 980 liters. With. (731 kW), wingspan - 13.95 m, aircraft length - 10.0 m, height - 3.5 m, empty weight - 1928 kg, maximum take-off weight - 3526 kg, maximum speed - 365 km / h, rate of climb near the ground - 300 m/min, practical ceiling - 7500 m, range - 660 km, armament - four 7.7-mm machine guns and up to 700 kg of bombs. |

PWS-26

The number of PWS-26 training and communications aircraft captured in Poland, manufactured by Podlaska Wytwornia Samolotów, amounted to almost fifty copies. They were sent to the factory in Milets for

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restoration and repair, after which the Germans sold 28 aircraft to Romania, and the rest of the aircraft were used in the Luftwaffe for initial training of flight personnel. Soon one of the machines (code VG+AS) was transferred to the Berlin Aviation Museum.

Characteristics of PWS-26: crew - 2 people, power plant - | engine "Wright" JS with a capacity of 220 liters. With. (164 kW), wingspan - 9.0 m and their area - 25.0 m², IILH- on the aircraft - 7.03 m, height - 2.74 m, empty weight - 885 kg, take-off weight - 1170 kg, maximum speed - 201 km / h, cruising speed - 180 km / h, time to climb 1000 m - 3.7 min, service ceiling - 4200 m, range - 460 km, armament - one 7.7-mm machine gun and 24 kg bombs.

RWD-8

Several training and communications aircraft RWD-8 manufactured by Doswiadczalne Warsztaty Lotnicze were restored at the factory in Milets and used by the Luftwaffe. After the capture of the Baltic States by the Germans, an aviation unit was formed as part of the Luftwaffe, which was armed with about 10 RWD-8 vehicles, piloted by Zston pilots. In 1943, these aircraft took part in combat operations against the Soviet Union.

Characteristics of the RWD-8: crew - 2 people, power plant - 1 PZInz "Junior" engine with a capacity of 120 hp. With. (89 kW), wing span - 11.0 m and its area - 19.5 m², aircraft length - 8.0 m, height - 2.3 m, empty weight - 480 kg, takeoff weight - 730 kg, maximum speed - 175 km / h near the ground, cruising speed - 140 km / h, time to climb 1000 m - 4.2 min, service ceiling - 5000 m, range - 500 km, armament - four 7.7-mm machine gun and up to 700 kg of bombs.

Soviet aircraft

Among the captured aircraft, the Germans Oyli had the Soviet Il-2, Il-4, I-153, Yak-1, U-2 and UT-2. Silts were used by the Germans in OCHOBHOM as ground targets for practice firing and bombing. Several planes Yak- |

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were used in units in which Finnish pilots flew, and I-153 aircraft were used for training flights in the JVS 3 fighter unit.

U-2 and UT-2 were flown by Russian volunteers from the POA of General Vlasov (these units will be discussed below).

Characteristics of the I-153: crew - 1 man, power plant — 1 M-62 engine with a capacity of 800 liters. With. (597 kW), wingspan - 10.0 m (upper) and 7.5 m (lower) and their area - 22.1 m², aircraft length - 6.18 m, height - 3.0 m, empty weight - 1360 kg, takeoff weight - 1860 kg, maximum speed - 444 km / h, maximum rate of climb - 943.0 m / min, service ceiling - 11,000 m, range - 740 km, armament - four 7.62-mm (or 12.7 mm) machine gun.

Characteristics of the Yak-1: crew - 1 man, power plant — 1 engine M-105 PF with a capacity of 1180 liters. With. (880 kW), wing span - 10.0 m and its area - 17.15 m², camo flight length - 8.48 m, height - 1.7 m, empty weight - 2410 kg, takeoff weight - 2700 kg, maximum speed — 592 km/h, maximum rate of climb — 926.0 m/min, service ceiling — 10,000 m, range — 850 km, armament — two 7.62 mm machine guns and one 12.7 mm machine gun or two 7.62 mm machine guns and one 20 mm cannon.

Characteristics of IL-2M3: crew - 2 people, power plant - 1 AM-38F engine with a capacity of 1720 liters. With. (1283 kW), wingspan - 14.6 m and its area - 38.5 m², aircraft length - 11.6 m, height - 4.17 m, empty weight - 4525 kg, take-off weight - 6360 kg, maximum speed — 414 km/h, maximum rate of climb — 250.0 m/min, service ceiling — 6360 m, range — 765 km, armament — one 12.7 mm machine gun, two 23 mm cannons, up to 1000 kg of bombs and eight 82-mm NURS.

Characteristics of IL-4: crew - 3 (4) people, power plant - 2 M-88B engines with a capacity of 1100 liters each. With. (820 kW), wing span - 21.44 m and its area - 66.7 m², aircraft length - 14.76 m, height - 4.1 m, empty weight - 5800 kg, takeoff weight - 11 570 kg, maximum speed - 430 km / h, practical ceiling - 9700 m, range - 3800 km, armament - one 12.7-mm machine gun, two 7.62-mm machine guns and up to 2700 kg of bombs.

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Ar 196U1

Ar 232A

Ar234C

Ar 240U3

Ar 396U1

Ar66C

Ar 79

Ar 95 Land

Ar 95 See

Ar 96A in flight

Ar 96A

Ar 96B

BR20

Ba 349

Ba 88

Bf 109F-2

Bf 110-2

Bf 110

Bu 181

Vu 138M5

Wu 141

Wu 222V7

Cant 7.506

DFS 230A-1

DFS 230V7

Do 17Z-2

Do 18D

Do 18E

Do 215B-1

a i

Do 217K-1

Do 217P

Do 22W

Do 24MS

Do 24M1

Do 26

Do 317A

Do 335V 11

Fa 223V2

Fh 104

Fi 103R

Fi 167

E| 282A

Fw44

Fw 56

Fw 58 See

Fw 58

Fw 190A-3

Fw 200

Go 145A

Go 242B

Go 244

He45c

He 46a

He 46b

He 50AW

Not 515

He 50B

He 60

He 70

He 111 with underwing Fi 103

Not 111

He 111K

He 114

He 115

He 115K

He 177

He 177B

Not 219V1

He 219V16

Ho 229V2

Hs 123

Hs 126 in flight

Hs 126

Hs 129

Hs 129B-3

hs 132

SO-80

Ju 52 in flight

ÿi 86 with engines] total

Ju 87

Ju 87B-K

Ju 88

Ju 188E-1.tif

Ju 287

Ju 288V2

Ju 288V9

Ju 388L-0

Ka 430

KL 358

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M.S.200

Me 163B

Me 210A-1

Me 262A-2a

Me 323 (rear view)

Me 323

Ris

Me R1101M1

Mitsubishi Nippon (G3M transport variant)

PZL R-11

PZL P-23

PZL P-37

Re.2005

SM79

Ta 152N-0 experienced

Aichi D3A

Yokosuka DAY

Kawasaki Ki-45

Kawasaki Ki-48

Kawasaki Ki-61

Mitsubishi SZM

Mitsubishi CAM

Mitsubishi MS-20

mitsubishi abm

Mitsubishi Ki-46

Nakajima A6M2-N

Nakajima Ki-27

Nakajima Ki-43

Nakajima Ki-44

Maa Crapt Ba 349

french planes

M.V.152/ M.V.155/ M.V.157

Of the 173 MB-type fighters captured by the Germans in 1940, developed by the French company Maurice Bloch, 83 vehicles were combat ready. Aircraft M.V.152 were used for training flight personnel, and M.V.155 were in service with fighter squadrons JG 26, JA 100 and JG 103. In addition, the Luftwaffe in 1943 got the only copy of the M.V. .157.

Characteristics of M.V.152: crew - 1 man, power plant - 1 engine 14M 49 with a capacity of 1100 liters. With. (820 kW), wingspan - 10.14 m, height - 3.03 m, empty weight - 2097 kg, takeoff weight - 2522 kg, maximum speed - 482 km / h, climb time 8000 m - 14.3 min , practical ceiling - 11,280 m, range - 580 km, armament - two 20-mm HS404 cannons and two 7.5-mm machine guns.

MS406/MS410

The Germans captured at least 120 Morane-Saulnier fighters - MS406 and its modification M.5.410 with a reinforced wing and 4 machine guns. One aircraft with German markings was displayed in the museum. aviation in Berlin. Other hijacked aircraft were

They were transferred to the SNACAO factory in Bourges, where, after repairs, they were repainted in typical German camouflage and received German markings. Airplanes were used mainly for training purposes. In 1941, the Germans sold a batch of M.5.406 and M.5.410 aircraft to Finland. In November 1942, many more Mogape fighters were captured, of which 46 converted to German standards were in service with the JG 101, JG 103 and IA 105 fighter squadrons, where they were used to train young pilots. Soon only 33 combat-ready aircraft remained, they were sold to Bulgaria and Croatia.

Characteristics of M.5.406: crew - 1 person, power plant - | Hispano-Suiza engine 12Y31 with a capacity of 860 liters. With. (641 kW), wing span - 10.6 m and its area - 16.0 m², aircraft length - 8.15 m, height - 2.8 m, launch weight

6 M. and V. Kozyrevy 141

moreover — 1900 kg, take-off weight — 2470 kg, maximum climb rate — 485 km/h, service ceiling — 9400 m, range — 800 km, armament — one 20 mm cannon and two 7.5 mm machine guns.

0.520

In November 1942, the Luftwaffe had 246 captured Dewoitine fighters D.520, of which only 182 were capable of flying. Repainted and equipped according to German standards, the aircraft were used to train flight personnel in fighter squadrons JG 101, JG 103 and JG 105.

Characteristics D.520Cl: crew - | man, power plant - | engine "Hispano-Suiza" 12-45 with a capacity of 935 liters. With. (697 kW), wingspan - 10.2 m and wing area - 15.97 m², aircraft length - 8.6 m, height - 2.57 m, empty weight - 2040 kg, take-off weight - 2670 kg, maximum climb rate - 534 km/h, practical ceiling - 10,500 m, range - 1530 km, armament - one 20 mm cannon and four 7.5 mm machine guns.

Czechoslovak aircraft

After the country was occupied by Germany, all Czechoslovak aircraft (Ba-122, Bs-122, S-328, B-534, etc.) were assembled at German air bases in Merseburg, Zdring and Munich. A certain number of aircraft were then distributed among the Luftwaffe units, the Germans sold some of the aircraft to Romania and Bulgaria, and some went to Slovakia.

B-534

B-534 aircraft were in service with the special training unit "Ama Lehrgang" and the bomber squadron "Lützow". From July 1939 until the spring of 1940, B-534 aircraft were used as night fighters in squadrons 3./JG 70 and 3./JG 71, based in Friedrichshafen. Equipped with retractable gear

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B-534 was assigned to the glider squadron "Lastenseglerstaffel" based in occupied France. Initially, B-534s were used together with Hs 123 aircraft to train flight personnel, then the squadron was transferred to the Soviet-German front. There, B-534s were used to tow DFS 230A transport and cargo gliders, which supplied ammunition and food to the German troops encircled near Stalingrad. The modernization of the B-534 and VK-534 aircraft for the Germans was provided by factories in Kunovice and Olomuc. Three VK-534 aircraft were tested as carrier-based aircraft for the Graf Zeppelin aircraft carrier, while the aircraft design was modified to take into account the possibility of launching from a catapult and landing using a hook. Flight tests of the converted aircraft were carried out between 1940 and 1941. Tests showed that the aircraft's power frame was not adapted to operating conditions from an aircraft carrier,

several times during landings, the hook attachment broke out of the fuselage. Therefore, further work on carrier-based fighters VK-534 was stopped.

Characteristics V-5341U: crew - 1 man, power plant - Hispano-Suiza engine
| 2Ycrs with a capacity of 835 liters. With. (623 kW), wingspan - 9.4 m and its area - 23.56 m², length of the aircraft - 8.2 m, height - 3.15 m, Bec nyc-togo - 1460 kg, take-off weight - 1980 kg, maximum speed - 405 km / h at an altitude of 4400 m, cruising speed - 345 km / h, time to climb 5000 m - 5.5 min, range - 600 km, service ceiling - 10,600 m, armament - four 7.7 mm machine gun.

Be-51

In 1936, the Czechoslovak company Benes-Mraz built the light tourist aircraft Be-50 Beta Minor. A modified version of the machine under the designation Be-5 1 was used by the Luftwaffe as a training and communications aircraft.

Characteristics of the Be-51: crew - 2 people, power plant - engine "Walter Minor" 4-1 with a power of 95 liters. With. (71 kW), wingspan - 11.44 m and its area - 15.3 m², length

e 163

on aircraft - 7.84 m, height - 2.05 m, empty weight - 480 kg, takeoff weight - 760 kg, maximum speed - 205 km / h of ground, cruising speed - 180 km / h, climb time 1000 m - 6.0 min, range - 800 km, practical ceiling - 5000 m.

Italian planes

m.s.202

After the capitulation of Italy, the Germans captured a large number of Italian aircraft as trophies. Among them were 47 Macchi M.S.202 fighters, which were used in the Luftwaffe mainly for training flight personnel. Soon several fighters from this batch were transferred to Croatia.

m.s.94

Since the beginning of the war, Italian aviation was armed with requisitioned civilian flying boats M.S.94, which had been in operation since 1935, their total number was 12 copies. After the capitulation of Italy, the MS94 boats were used by the Luftwaffe in the Mediterranean area.

Characteristics of M.S.94: crew - 3 people, power plant - 2 Alfa Romeo 126 KS10 engines with a capacity of 800 hp each. With. (598 kW), wingspan - 22.93 and its area - 76.0 mg, aircraft length - 16.17 m, height - 5.45 m, empty weight - 5150 kg, takeoff weight - 8200 kg, maximum speed - 292 km/h, cruising speed - 246 km/h, time to climb 2000 m - 7.9 min, range - 1490 km, service ceiling - 6000 m, number of passengers - 12 people.

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Fw 189

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He 112

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26 Kraftstoffbehälter Abdeckblende 19 Linsenlafette mit MG 15 27 Innere Verstellklappe

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3 Einziehbares Fahrwerk

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13 Seitenruder mit Trimmklappe 14 Trimmklappe Key Höhenruder 15 Einziehbares Spornrad

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21 Peilgerät

22 Schleppantenne

23 Bombenraum

Episode 24

25 Kraft- und Schmierstoffbehälter

Ju 88, general view

26 Landeklappen 27 Querruder ti Trimmklappe_ . 28 Positionslampe (Backbord) 29 Staurohr |

30 Sturzflugbremse (zweiteilig) 31 Scheinwerfer

32 Enteisungsanlage

33 Verstellluftschraube

34 Fahrwerksklappen

Ju 88

Ju 90

Me 163

Me 262

Me 410

MS406

M.5.410

2. ITALY

During the First World War, in which Italy fought on the side of the Entente against Germany and Austria-Hungary, an aviation corps (Corpo Aeronautico Militare) operated as part of the army. After the fascists came to power, headed by Benito Mussolini, an aviation commissariat was organized, which on March 28, 1923 decided to form the country's air force under the name Regia Aeronautica (royal aviation). The development of aviation in Italy in the period from the late 20s to the mid 30s. was accompanied by noisy propaganda and record flights that increased the prestige of the fascist regime.

The Italian attack on Zfiopia on October 3, 1935 was the last attempt by a European state to seize a new African colony. The Fascist regime had carefully prepared for this attack, and its air force had received substantial funding for the purchase of new aircraft. Units were sent to Zfiopia with the latest machines for those times, and the remaining units flew at home on obsolete aircraft, the designation "bis" was added to the number of such units. So, for example, the 27th stormo (stormo) fought in East Africa on Ca aircraft. 111, while in Italy the pilots from Stormo 27615 ne flew on Ca.74 and Ca.102 aircraft. The military campaign was launched from the neighboring Italian colonies Zritreya (northern front) and Somalia (southern front). The Ethiopian capital of Addis Ababa fell on May 5, 1936, four days later Mussolini declared Italy an empire. Aviation has become decisive

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A major factor in the victory over Ethiopia, the weak local air defense system allowed Italian air reconnaissance to track every step of the enemy, and bombers to strike with impunity at places where Ethiopian troops were concentrated. The military actions in Zfiopia, the successes of the Italian corps "Aviazione Heropapa" in Spain and the war against Albania in 1939 became to a certain extent a demonstration of the military strength of Italy.

The Italian TOTO aircraft of the time were comparable in their technical level to the aircraft of other European countries, but the wars in Ethiopia and Spain actually blocked the further development of Italian aviation. The increase in budgetary resources at OCHOBHOM went towards pilot training, the construction of an aerodrome in Africa, and an increase in the rate of release of mass-produced types of aircraft. Realizing this, the top military leadership of the country in 1938 adopted the "Program K", the purpose of which was the quantitative and qualitative improvement of aviation. It was assumed that as a result of the implementation of competitive programs by the end of 1939, modern types of aircraft would appear that would allow Italy to take a leading position in world aviation. But there was not enough money for the full implementation of Program R, so the Italian aircraft industry was unable to ensure a significant increase in the share of all-metal aircraft in serial production.

Meanwhile, successful fighting against weak opponents in Ethiopia, Spain, and Albania created a sense of superiority among the Italian top leadership. Although Mussolini and his military experts understood that Italy was not prepared for a new war, the Italian government nevertheless declared war on France on June 10, 1940.

Before the outbreak of World War II, all of Italy was divided into three air districts with headquarters in Milan, Rome and Palermo. The fourth district was the territorial zone (Zona Territoriale), which included Sardinia, Albania, Libya and the islands of the Aegean Sea. The air district usually had three air divisions or brigades - two bombers and one fighter. The division included three storms. Stormo, in turn, consisted of

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two groups (Gruppo), the group consisted of 2-3 squadrons (Squadriglie) with three links (Sezione) in each, in each link there were three aircraft. Regia Aeronautica was divided into army aviation (Aviazione reg la Regia Esercito) and naval aviation (Aviazione per la Regia Marina).

At the time of Italy's entry into World War II, the Regia Aeronautica had 32 stormos, 13 separate groups, 60 separate squadrons and 4 separate units. In their composition. there were 3,345 vehicles (1,332 bombers, 1,160 fighters and fighter-bombers, 497 reconnaissance and surveillance aircraft, 49 military transport aircraft, 38 communications and 269 training aircraft).

Entering the war with France, Italy then began hostilities in North Africa. From October 1940 to January 1941, the KA also participated together with the Luftwaffe in the "Battle of England", however, due to limited navigational skills, various problems with radio equipment and with the German language, joint operations of Italian and German aviation units did not give good results. At the end of October 1940, Italy began hostilities against Greece, while the main role of the spacecraft was to support ground forces. In April 1941, the war expanded into Yugoslavia, where Italian aircraft were used in operations against partisans. units of the spacecraft, together with the Luftwaffe, fought on the Soviet-German front. During the war, the Italian aviation industry did not keep up with making up for the loss of aircraft, so by September 1943 only 1306 aircraft remained in the spacecraft, and only one third of this number was serviceable.

On July 25, 1943, Mussolini was overthrown and arrested, and on September 8, 1943, the new government of Italy concluded a truce with the Allies. Immediately after this, the Germans occupied the northern part of Italy, and the Italian army was practically disbanded. By September 12, German intelligence services were able to determine the place where Mussolini was under arrest. The operation to rescue him, carried out by a special detachment led by OTTO Skorzeny, was successful, and on September 14, Mussolini was taken to Germany.

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On October 13, the new government of Italy declared war on Germany. From the planes and their crews that joined the Allies in the south, a new air force was formed, which became part of the so-called Balkan Air Force and fought against the Germans. In addition to the 203 Italian aircraft, this air force used many types of allied aircraft. The fighters performed tactical missions, while the bombers carried out the supply of the Italian detachments fighting on the side of the Allies and the partisans in Yugoslavia, were engaged in rescue at sea, performed towing and other flights in support of the Allied forces.

The remnants of the Regia Aeronautica, based in the north of the country, came under the control of the fascist Repubblica Sociale Italiana (RSI - Italian Social Republic), created on September 23 under strong pressure from Hitler, Mussolini again stood at the head of the RSI. Colonel Ernesto Botto was appointed Air Vice-President in the joint RSI Ministry of National Defense, later renamed the Ministry of the Armed Forces. He was given the responsibility of forming the Aeronautica Repubblicana (AB - Republican Air Force). As a result of Botto's repeated radio appeals to the population about protecting the skies of Italy, the number of people wishing to serve in the AK reached 15,000, after which the Germans allowed the formation of the Aeronautica Repubblicana.

In addition to the AR, about 90,000 Italians served as volunteers in the Luftwaffe: 50,000 of them served in anti-aircraft units, a number of former paratroopers from the Folgore and Nembo divisions fought as part of the 4th Airborne Division Luftwaffe, in addition, the 200th communications regiment included two Italian battalions.

The first two groups of fighters began to function in the AR, which entered the fight against Allied bombers in January 1944, in March - a group of torpedo bombers, and in April - a transport group. The personnel of the airborne regiment fought along with the infantry on the front at Anzio, while other flying units were not formed until the end of the war. At first, fighter units used

italian planes

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type M.S.205, G.55 and Ke.2005, but they were later replaced by German Bf 109 aircraft. At the end of the war, a small group of Italian pilots were in Germany, preparing to train

jet fighters Me 163 and Me 262, but the war ended before training began flying.

The Aeronautica Repubblicana operated under the control of the German 2nd Air Fleet. However, E. Botto's relations with the German command soon deteriorated, so in March 1944 he was replaced by General Arrigo Tessari, who managed to get a batch of Bf 109 fighters from Germany. In June 1944, AK bombers attacked Gibraltar from southern France. Immediately after the implementation of this operation, under pressure from the Germans, the name Aeronautica Repubblicana was changed to Ha Aeronautica Nazionale Repubblicana (ANR), but in August the ANR personnel refused to take the oath to Hitler and wear the German uniform, after which AMK was disbanded. Only in November 1944 did the 2nd Fighter Group return to combat operations, and in February 1945 it was joined by the 1st Fighter Group. Despite heavy losses, these two units fought until mid-April 1945. After the capture of Italy by the Allies, the AMK was finally disbanded, and on April 29, the commander of the 1st group, Major Adriano Visconti, was executed by Italian partisans. All ANR personnel were discharged from the Italian armed forces.

In total, the Italian aviation industry built 11,500 aircraft until September 1943, supplemented by 400 aircraft received from Germany and 97 French captured aircraft. During the period from 1940 to 1945, spacecraft pilots made about 280,000 sorties, shooting down 2533 aircraft in air battles and destroying 474 aircraft on the ground, 144 pilots scored five or more air victories. During the same time, the losses of Italian aviation amounted to 6805 aircraft and 22,805 personnel (among the crews of aircraft, the losses amounted to 2590).

The main Italian aviation companies were involved in the implementation of the "Program R" and wartime aircraft programs: Ambrosini, Breda, Vercellese, Cantieri, Caproni, Macchi, Meridionali, Nardi, Novaresi, Piaggio, Reggiana, Savoia Marchetti and Fiat.

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"Ambrosini"

5.A.1.207

By order of the spacecraft, the Ambrosini company (Societa Aeronautica Italiana Ambrosini) developed a light fighter-interceptor 5.A.1.207. |

The prototype aircraft 5.A.1.207 took off for the first time in the autumn of 1940, and in the spring of 1942 flight tests of the second model began. Based on the test results, the production of a pre-production batch of 14 vehicles equipped with two Breda-SAFAT machine guns began. However, the last six machines from this batch were equipped with German MG 151 cannons, the same armament was supposed to be installed on production aircraft. The total number of aircraft built 5.A.1.207 was 18 examples.

Characteristics 5.A.1.207: crew - 1 man, power plant - 1 Isotta-Fraschini engine Delta EC40 750 hp With. (559 kW), wingspan - 9.0 m and its area - 13.9 m², aircraft length - 8.02 m, height - 2.4 m, empty weight - 1750 kg, take-off weight - 2415 kg, maximum - naya speed - 625 km / h, cruising speed - 490 km / h, range - 950 km, climb time 2000 m - 2.3 minutes, service ceiling - 10,200 m, armament - two 12.7-mm machine guns " Breda SAFAT.

"Delirium"

Zrnesto Breda founded in 1886 a locomotive company called Societa Italiana Ernesto Breda. In 1917, the company created an aircraft building division, after which it received an order for the construction of 600 Ca.5 bombers. However, before the end of the First World War, Breda managed to build only two aircraft, but after that it continued to work in

aviation by organizing a flight school in Sesto San Giovanni. For the next 15 years, Breda specialized mainly in the construction of tourist monoplanes and training biplanes (including the Ba. 19 used by the first Italian acrobatic teams, and the Ba.25, the standard training

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training aircraft), but in COCTaBe its products were also bombers of the C.C.20 and Ba.32 types.

In 1935, Breda acquired Industrie Meccaniche e Aeronautiche Meridionali, whose main products were Co.37, Ro.43 and Co.41 aircraft. Starting the production of all-metal aircraft, Breda produced the Ba.64 and Ba.65, as well as the Ba.88 heavy fighter. However, none of them lived up to the expectations of the company's management, forcing the company to start licensed production of Macchi C.200 and C.202 fighters. In 1942, Breda prepared the mass production of the Cant Z.1018 bomber; at the end of April 1944, the plant was destroyed by American bombers.

Ba.25

The first flight of the Ba.25 training aircraft took place in 1931. After successful military trials at the end of 1931, the aircraft went into production. Under the designation Ba.25idro produced a float version of the aircraft. The total number of built Ba.25 exceeded 800 copies, they were also in service with Afghanistan, China; Paraguay, Bolivia, Ecuador and Hungary. During the war, this aircraft in RA was used for training

pilots and as a communications aircraft.

Characteristics Ba.25: crew - 2 people, power plant - | Alfa Romeo D2 engine with 240 hp With. (179 kW), wingspan - 10.0 m and their area - 25.0 m², aircraft length - 8.0 M, height - 2.0 m, empty weight - 750 kg, takeoff weight - 1000 kg, maximum speed — 205 km/h, cruising speed — 160 km/h, range — 400 km, service ceiling — 4900 m. |

Ba.39

The design of the light passenger aircraft Ba.39 was developed in 1932, the prototype of the machine first rose to the BO3 spirit in September Toro of the same year. The aircraft successfully performed at many sports competitions and took part in long-distance flights. In addition to civil aviation, it was used in the air force as a communications aircraft.

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The military modification of the aircraft was produced in two versions - Ba.39Met (Metropolitano) for use in Italy itself and Ba.39Col (Coloniale) for use in the Italian colonies. An ambulance version of the aircraft was also produced under the designation Ba.39S, capable of carrying two passengers. The total number of aircraft built was 104.

Characteristics Ba.39: crew - | man, power plant — | Alfa Romeo S63 engine with 145 hp With. (108 kW), wing span - 10.4 m, its area - 17.5 m², aircraft length - 7.44 m, height - 2.94 m, empty weight - 560 kg, takeoff weight - 840 kg, maximum speed - 220 km/h, range - 900 km, time to climb 4000 m - 21.0 min, service ceiling - 6000 m, number of passengers - |.

Ba.65

Breda has developed a Ba.65 multi-purpose aircraft capable of performing the functions of an interceptor, light bomber, reconnaissance or attack aircraft. aircraft prototype

performed its first flight in September 1935. After successful tests, an order for the construction of 80 Ba.65 aircraft followed. However, the experience of combat use in Spain showed that the serial Ba.65 machines worked satisfactorily only as attack aircraft. In the Italian Air Force, these aircraft were equipped with the 5th and 50th Stormos.

The second series of 137 aircraft was built by Breda (80 aircraft) and Caproni Vizzola (57 aircraft). Unlike the first series of machines, which had the Spote Kupe engine, the machines of the second series were equipped with a more powerful Isotta Fraschini K14 engine. Six Ba.65 aircraft of the second series fought as part of the Aviazione [eriopagia] unit in Spain in 1938, but in July 1939 the production of the aircraft was stopped.

In June 1940, Ba.65 aircraft took part in the fighting against the British in North Africa. However, the low flight characteristics of the aircraft and its low operational reliability in desert conditions led to the loss of the last Ba.65 in February 1941.

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A large number of the Italian BBC's Ba.65s had a two-seat configuration with an observer or gunner in an open cockpit positioned behind the cockpit. A smaller number of aircraft were built in a single-seat configuration with a Breda L machine gun turret, such aircraft usually carried up to 300 kg of bombs in the fuselage or up to 200 kg under the wing.

In 1938, 25 two-seater Ba.65bis with a Fiat engine were sold to Iraq. In that year, 20 Ba.65s with a Piaggio PXI C40 engine were delivered to Chile (of which 17 were single-seat), 10 Ba. 65bis was purchased in November 1939 by Portugal. In June 1937, one Ba.65 aircraft was tested with an American Pratt & Whitney R-1830 engine in anticipation of an order from China, but this work did not receive further continuation. The total number of Ba.65 aircraft built was 218 units.

Characteristics of Ba.65: crew - 1 person, power plant - 1 Isotta Fraschini K14 engine with a capacity of 1010 hp. With. (753 kW), wing span - 11.9 m and its area - 23.5 m², aircraft length - 9.6 m, height - 3.2 m, empty weight - 1950 kg, takeoff weight - 2500 kg, maximum speed - 430 km/h at an altitude of 5000 m, range - 550 km, practical ceiling - 7800 m, armament - one 12.7-mm and one 7.7-mm machine guns "Vgeda-5ARAT" and bomb load weighing 300 kg in the bomb bay or 200 kg under the wing.

Ba.88

The multi-purpose aircraft Ba.88 "Lince" ("Lynx") was developed in 1936, its prototype in April 1937 set two world speed records when flying over a given distance. It was supposed to use the aircraft, equipped with two Piaggio PXI RC40 engines, as a fighter-bomber and long-range reconnaissance aircraft.

On June 16, 1940, twelve Ba.88 aircraft from the 19th separate group attacked airfields in Corsica, three days later nine Ba.88s made a second attack. An analysis of these actions showed that the characteristics of the serial Ba.88 machines are worse than those of the prototype aircraft, so they can only be used with restrictions. Especially

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Deficiencies were clearly manifested during the operation of aircraft of the 7th separate group in Libya, where they fought with the British. Engines equipped with air filters to protect against sandstorms overheated and could not develop their design power. Attacks on targets in the Sidi Barram area were interrupted in September 1940 due to the inability of the aircraft to maintain a given altitude when flying in formation, and also due to the fact that the real speed turned out to be almost half the calculated speed. By mid-November 1940, most

The surviving Ba.88 aircraft were dismantled with all equipment, and the aircraft themselves were used as decoys placed around the airfields.

Three Ba.88s were modified at the Agusta plant in 1942 into a dive bomber variant. The wingspan was increased by 2 m to reduce the specific load on the wing, Fiat A74 engines were installed, the number of 12.7-mm machine guns in the nose increased to four, and air brakes were also installed. These aircraft under the designation Ba.88M were delivered in September 1943 to the 103rd Separate Dive Bomber Group, and test flights were carried out by Luftwaffe pilots. The total number of Ba.88 aircraft built was 152 units.

Characteristics of Ba.88: crew - 2 people, power plant - 2 Piaggio RXI KS40 engines with a capacity of 960 hp each. With. (716 kW), wingspan - 15.6 m and its area - 33.34 m², aircraft length - 10.79 m, height - 3.1 m, empty weight - 4650 kg, maximum takeoff weight - 6750 kg, maximum speed — 490 km/h, range — 1640 km, service ceiling — 8000 m, armament — three 12.7 mm machine guns, one 7.7 mm Breda-SAFAT machine gun and up to 1000 kg of bombs.

"Vercellese"

FL.3

In 1939, the Regia Aeronautica ordered the first batch of 50 FL.3 trainers developed by the Vercellese company (Azionaria Vercellese Industrie Aeronautiche). In the same year, an aircraft equipped with an engine

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CNA D-4, was adopted. It was mainly used as a communications aircraft. In total, more than 400 FL.3s were built.

Characteristics of FL.3: crew - 2 people, power plant - 1 60 hp CNA D-4 engine. With. (45 kW), wing span - 9.85 m and its area - 14.34 m², length - 6.36 m, height - 1.71 m, empty weight - 300 kg, takeoff weight - 525 kg, maximum speed - 177 km / h, cruising speed - 150 km / h, range - 820 km, practical ceiling - 2000 m.

"Cantieri"

In 1921, the Kozulich family from Griest, already active in shipbuilding and maritime transport, founded the air transport service SISA. In 1923, a seaplane repair shop was opened in Monfalcone on the basis of the existing CNT enterprise ("Cantieri Navale Triestino"). Soon the workshop was transferred to the production of licensed products and the construction of experimental aircraft. SISA trained pilots for the Regia Aeronautica using CMT.7 and Sash! biplanes. In 1926 began commercial air transportation with its Cant.10 and Can!22 aircraft.

In 1930, CNT merged with other companies to form CRDA (Sapier Riuniti Dell' Adriatico), but its aircraft continued to use the "Cant" designation. In 1933, CRDA was acquired by a state enterprise | CT, after which Filippo Zappata, who previously worked at Bleriot, came to CRDA as chief designer. In the next nine years, CRDA created 18 new types of aircraft, setting about 40 world records, it also built an aircraft factory and an aerodrome with a flight test station. During this time, the number of employees of the company has increased from 350 to 5 thousand people. The Cant Z.501 and Cant Z.506 seaplanes, as well as the Cant Z.1007 land-based bomber, have become standard Italian aircraft in their respective classes.

In 1939, F. Zappata, disillusioned with SKOA, began all negotiations with Breda, and in 1942 he moved to work for it. After the capitulation of Italy, the SKOA firm continued

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sting to work under the control of the Germans, but in the spring of 1944, due to frequent bombing by allied aircraft, the production of products at the company was stopped.

Glanders! 2.501

Light reconnaissance seaplane Cant 7.501 "Gabbiano" ("Seagull") was developed under the leadership of F. Zappata in the early 30s. In the designation of the aircraft, the letter "2" is the first letter of the name of the chief designer (Filippo Zappata). The prototype flew for the first time in 1934, and in TOM the same year, OH set a world seaplane distance record, covering a distance of 4120 km without landing. In July of the following year, Gabbiano set the distance record to 4957 km.

Production of the Z.501 began in 1935, and the first vehicles were delivered to naval reconnaissance squadrons the following year. The aircraft was made entirely of wood with fabric-covered control surfaces, powered by a single Isotta Fraschini engine. Asso XI R2C.

In June 1940, already 202 Cant 2.501 aircraft were in service with the spacecraft, performing patrols and participating in rescue operations in the Adriatic and the Mediterranean. From September 1943, 19 Cant 2.501s went over to the side of the Italian ALLIED troops, while the rest of the aircraft fought on the side of the RSI. A total of 455 examples of the Cant Z.501 were built.

Characteristics of Cant Z.501: crew - 4-5 people, power plant - 1 engine "Isotta Fraschini" Asso XI R2C with a capacity of 900 liters. With. (671 kW), wing span - 22.5 m and its area - 62.0 m², aircraft length - 14.3 m, height - 4.4 M, empty weight - 3850 kg, takeoff weight - 7050 kg, maximum speed - 275 km/h at an altitude of 2500 m, range - 2400 km, time to climb 4000 m - 16.0 min, practical ceiling - 7000 m, armament - three 7.7-mm machine guns and four 160-kg or two 250 kg bombs.

Cant Z.506

The reconnaissance bomber and torpedo bomber Cant Z.506B "Airone" ("Heron") became a further development of the civil aircraft Z.506A. Its design was completed in

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1936, the following year, the first series of 32 aircraft was flown, differing from the prototype in the presence of a bomb bay in the ventral gondola, a bombardier station and a gun mount in the rear of the fuselage, and a semi-retractable gun turret was also added.

Cant Z.506B aircraft from the first series underwent military trials as part of Aviazione Legionaria in Spain in 1939, another 30 aircraft were ordered by Poland. However, only one aircraft arrived in Poland, the rest, due to the Second World War that began in September, entered service with the Italian Navy. By June 1940, production of the Z.506B aircraft was in full swing, by which time 95 aircraft had been built. Most of the aircraft were in service with the 31st and 35th Stormos, these units suffered heavy losses during the Greek campaign.

The Cant Z.506B aircraft was produced in different series in many modifications, one of which was the Z.506S "Soccorso" marine rescue version, this version was also used in small numbers by the Luftwaffe. After the Italian surrender, 23 Z.506Bs and five Z.506Ss flew as part of the Raggruppamento 14th, which fought on the side of the Allies, performing transport tasks in OCHOB. The total number of Cant Z.506B aircraft built was 344.

Characteristics of the Cant Z.506B series XII: crew — 5 people, power plant — 3 Alfa Romeo 126 RC34 engines with a capacity of 750 hp each. With. (559 kW), wing span - 26.5 m, its area - 86.3 m², aircraft length - 19.24 m, height - 7.45 m, empty weight - 8750 kg, takeoff weight - 12 705 kg, maximum speed - 350 km / h at an altitude of 4000 m, range - 2000 km, climb time 4000 m - 20.1 min, service ceiling - 7000 m, armament - one 12.7 mm and three 7.7 mm machine guns, up to 1200 kg bombs or one 800 kg torpedo.

Glanders! 2.511

In 1937, the firm received an order from the Italian Navy to develop a transport seaplane capable of flying across the Atlantic Ocean from Europe to North America. The first flight of the prototype under the designation

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4.511 APapiso, equipped with Alfa Romeo 135 engines with a power of 1330 hp each. s., took place on March 31, 1939.

The second prototype, powered by Piaggio R.HP RC35 engines, began flight testing in September of the following year. This aircraft was requisitioned and handed over to the military, where it received military number MM.396. The aircraft was used during military operations in Yugoslavia and Greece as a bomber and torpedo bomber, but was destroyed during an Allied raid on an Italian air base.

Characteristics of Cant 2.511: crew - 4-5 people, power plant - 4 Piaggio engines PXIT RC 1500 HP With. (1119 kW), wing span - 39.36 m and its area - 195.0 m², aircraft length - 28.5 m, height - 11.0 m, empty weight - 20,460 kg, take-off weight - 33 560 kg, maximum speed - 420 km / h at an altitude of 4000 m, cruising speed - 330 km / h, range - 4500 km, climb time 4000 m - 16.0 min, service ceiling - 7000 m, armament - one 12.7 mm, three 7.7 mm machine guns, up to 1200 kg of bombs or one 800 kg torpedo.

Sat 2.1007

In 1935, work began on the Cant Z.1007 "Alcione" ("Kingfisher") bomber project, the prototype of which first flew in March 1937. The aircraft was equipped with three "Isotta Fraschini" Asso XI RC15 engines with a capacity of 840 hp. c., was made entirely of wood. The first machines had two-bladed wooden propellers, but all later versions were equipped with three-bladed metal propellers of the Alfa Romeo type. In 1938, the production of an improved Z.1007bis aircraft began, which had three Piaggio P.XIbis RC40 engines with a capacity of 1000 hp each. With. Aircraft Cant Z.1007bis of series I-PI had a conventional tail, and aircraft of series IV-IX were produced with spaced vertical tail.

When Italy entered the war, 87 Z.1007 and Z.1007bis bombers were in service, of which only 38 were serviceable. They were part of the 16th and 47th stormo stationed in Vicenza and

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based in Northern Italy. These units first entered combat operations against the Greek forces in October 1940. Subsequently, this type of aircraft was equipped with the 8th, 9th, 27th and 30th Stormo, 4th, 51st, 59th, 87th, 90th, 95th and 107th Groups and two separate squadrons. During the Battle of Malta in May 1942, Cant 7.1007s suffered heavy losses from the recently arrived Spitfire fighters, and they suffered similar losses during attacks on British convoys in the summer of that year. By the time of the capitulation of Italy, only a few machines remained in service, some of them became part of the RSI aviation, and some - in the Italian Air Force, who fought on the side of the Allies. The total number of Z.1007 and Z.1007bis built was 526 machines.

Characteristics of Cant Z.1007bis: crew - 5 people, power plant - 3 Piaggio engines PXIbis RC40 with 1000 hp each. With. (746 kW), wingspan - 24.8 m and its area - 70.0 m², aircraft length - 18.35 m, height - 5.22 m, empty weight - 9396 kg, take-off weight - 13621 kg, maximum speed - 455 km/h at an altitude of 4600 m, cruising speed - 338 km/h, range - 1795 km, practical ceiling - 7500 m, armament - two 12.7-mm, two 7, 7 mm machine gun, up to 1200 kg of bombs or two 450 mm torpedoes.

Glanders! 2.1018

In 1940, the Sap medium bomber was developed! Z.1018 "Leone". Tests were carried out on an optional batch of 12 machines, built in two versions - with a single-keel tail and with a spaced tail. The engines used were Piaggio RHP RC35 (1500 hp), Alfa Romeo 135 RC32 (1500 hp) or Fiat KA 1050 RC58 (1475 hp). A variant with a single-keel plumage was accepted into the series. Before the capitulation of Italy, only five mass-produced vehicles were built, two of which participated in hostilities against German troops.

Characteristics of Cant Z.1018: crew - 4-6 people, power plant - 2 Piaggio RAP RC35 or Alfa Romeo 135 RC32 engines with a capacity of 1500 hp each. With. (1119 KBr), wing span - 22.85 m and its area - 63.1 m², aircraft length - 17.63 m, height - 6.0 m, empty weight - 8800 kg, takeoff

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11,150 kg, maximum speed - 518 km / h, range - 1200 km, practical ceiling - 6400 m, armament - two 12.7-mm and two 7.7-mm machine guns, up to 1500 kg of bombs.

"Caproni"

Societa Italiana Caproni was founded in 1910 by Giovanni Caproni. Before the First World War, G. Caproni developed aircraft of his own design, and also built aircraft of other aircraft designers under license. In 1914, he patented the design of the world's first monoplane fighter with a machine gun for firing forward and upward, this fighter, under the designation Ca.20, flew in 1916.

In 1929, the company was reorganized and became known as Caproni Aeronautica Bergamasca. (CAB). The CAB company, whose main production was located in Taliedo, released in the mid-30s. a series of record-breaking aircraft, including the Ca. 161615, which reached a height of 17,083 m. Ca.101, Ca.111 and Ca.133 aircraft were used with great success during the wars in Zfiopia. In 1937, the CAB firm gained control over the Reggiane firm, which had already started developing the Ke family of fighters. By 1939, the company's production capacity accounted for 28 percent of the production capacity of the entire Italian aircraft industry. Wartime products consisted mainly of aircraft of various types. However, among the company's products were also ultra-small submarines used, in particular, in the Black Sea against the USSR.

F.5

Work on the F.5 fighter began in 1938, and already on February 19 of the following year, the first prototype of the aircraft took off, equipped with a Fiat A74 RC38 engine. Military tests of the aircraft, which lasted until July 15, 1940, showed that it not only was not inferior to its main competitors G.50 and M.S.200, but also surpassed them in rate of climb.

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An experimental batch of 12 F.5 fighters was ordered, which, as part of the 300th squadron, took part in the hostilities in Greece. Soon the planes were returned to the air base in Campino to participate in the defense of Rome. In May 1942, the F.5 aircraft were transferred to the 167th squadron, where they

used as night fighters. After the capitulation of Italy, only five combat-ready vehicles remained.

Characteristics E.5: crew - 1 man, power plant — 1 Fiat A74 RC38 engine with 900 hp With. (671 kW), wing span - 11.3 m and its area - 17.6 m², aircraft length - 7.9 m, height - 3.0 m, empty weight - 1850 kg, takeoff weight - 2350 kg, maximum speed - 510 km/h at an altitude of 3000 m, range - 1000 km, practical ceiling - 9500 m, armament - two 12.7-mm machine guns.

Ca.133

In 1934, Caproni developed the Ca aircraft. 133, which was produced in civilian and military versions. In the civilian version, the aircraft could carry 16 passengers. The military version of the Ca.133 was a bomber and transport aircraft; modifications of the Ca.133S (medical aircraft) and Ca.133T (military transport aircraft) were also built. The total number of Ca.133 aircraft produced was 525 copies.

Characteristics of Ca.133: crew - 3 people, power plant - 3 engines "Piaggio" RUP C16 with a capacity of 430 liters. With. (321 kW), wing span - 21.24 m and its area - 65.0 m², aircraft length - 15.36 m, height - 4.0 m, weight nyc - 4190 kg, takeoff weight - 6700 kg, maximum speed — 265 km/h, cruising speed — 230 km/h, range — 1350 km, service ceiling — 5500 m, armament — one 7.7 mm machine gun and 500 kg of bombs.

Ca.164

Biplane Sa. 164 was developed in 1934 for use as a two-seat touring aircraft. During the war it was used as a training and reconnaissance aircraft, in 1942 it was used to fight the Yugoslav partisans. After surrender

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Italy was in service with the allied BBC, based in Sicily.

Characteristics of Ca. 164: crew - 2 people, power plant - 1 Alfa Romeo 115-1 engine with a capacity of 185 hp. With. (138 kW), wingspan - 9.75 and their area - 22.4 m², aircraft length - 7.74 m, height - 3.0 m, empty Bec - 780 kg, takeoff Bec - 1030 kg, maximum speed — 217 km/h, cruising speed — 185 km/h, range — 530 km, service ceiling — 4250 m, armament — two 12.7 mm machine guns, armament — one 7.7 mm machine gun and 500 kg bombs.

Ca.308 - Ca.314

In 1935, at an exhibition in Milan, the prototype Ca.308 "Vogea" ("Northern Wind"), a six-seat passenger aircraft with a low wing, was demonstrated. Although the Vogea was built in only 7 examples, the OH was the forerunner of a number of twin-engine aircraft designed for various purposes.

The first of this series of aircraft was the Ca.309 "Ghibli" ("Desert Wind"), built 78 machines were intended for use in Libya. They were used as a light transport aircraft or reconnaissance bomber, which differed from the transport version by an extended glazed HOCOM, installation of bomb hardpoints, cameras and three 7.7 mm machine guns. One of the aircraft models was equipped with a 20 mm cannon in the forward fuselage. By the time Italy entered the war, seven squadrons were equipped with Ca.309 aircraft. The total number of Ca.309 aircraft built was 234 units.

_ In parallel with the Ca.309, a torpedo bomber and maritime patrol aircraft were developed under the designation Ca.310 "Libeccio" ("Southwest Wind"). He was constructively

similar to earlier machines, but had a retractable landing gear and was equipped with two Piaggio RUE C35 engines with a capacity of 470 hp each. With every. The prototype aircraft made its first flight on February 20, 1937. In the period from 1937 to 1939, 161 machines were delivered to the spacecraft. In addition, the aircraft was delivered abroad: to Norway (4 aircraft), Peru (16), Yugoslavia (12), Spain (16) and Hungary

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(36). Modification of the Ca.310615 aircraft became the prototype for the next version, which received the designation Ca.311. Structurally, the Ca.311 light reconnaissance bomber was similar to the prototype, but had an additional turret with a 7.7 mm machine gun. Under the designation Ca.312 (modified aircraft Ca.310), a version of a communication aircraft was produced, built on the order of Norway.

The modified Ca.310 aircraft with two Isotta Fraschini Asso 120 IRC C40 engines received the designation Ca.313. The first flight of the Ca.313 reconnaissance and torpedo bomber took place on December 22, 1939. This modification was ordered by France (200 vehicles), England (300 vehicles) and Sweden (64 vehicles), but the entry of Italy into the war made it impossible delivery of any aircraft to England, while France managed to receive only five Ca.313F modifications.

In the largest number (314 aircraft), the version of the aircraft was built under the designation Ca.314, which included the following options: sea patrol aircraft / convoy escort aircraft Ca.314A (Ca.314-SC), torpedo bomber Ca.314B (Ca.314-KA) and attack aircraft Ca.314C. At the end of the war, Ca.314C vehicles operated as part of Luftwaffe night attack aircraft groups in the Balkans.

Characteristics of Ca.310: crew - 3 people, power plant - 2 engines "Piaggio" RUP C35 with a capacity of 470 liters. With. (350 kW), wing span - 16.2 m and its area - 38.7 m², aircraft length - 12.2 m, height - 3.52 m, empty weight - 3053 kg, take-off weight - 4650 kg, maximum speed - 365 km/h at an altitude of 3000 m, cruising speed - 330 km/h, range - 1650 km, service ceiling - 7000 m, armament - three 7.7-mm machine guns and 400 kg of bombs.

Characteristics of Ca.314A: crew - 3 people, power plant - 2 engines "Isotta Fraschini" Delta RC35 with a capacity of 730 hp each. With. (544 kW), wingspan - 16.65 m and its area - 39.2 m², aircraft length - 11.8 m, height - 3.7 m, empty weight - 4560 kg, maximum takeoff weight - 6620 kg, maximum speed - 395 km/h at an altitude of 4000 m, cruising speed - 320 km/h at an altitude of 4200 m, range - 1690 km, practical ceiling - 6400 m, armament - two 12.7-mm and one 7.7 mm machine gun and 500 kg bombs.

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"Mackey"

A firm called "Nieuport-Macchi" was founded | May 1913 Giulio Macchi and his French partners with the aim of building the first aircraft for participation in the competition announced by the Italian army. During the First World War, Nieuport-Macchi's products accounted for one-fifth of the total aircraft production in Italy. In April 1924, the name "Nieuport Macchi" was changed to "Aeronautica Macchi", by that time Mario Castoldi worked as the chief designer of the company. The M.39 aircraft, created under his leadership, became the winner of the Schneider Cup competition in 1926, and the C.72 aircraft broke the world speed record in 1934. In its new branch, AUSA, the company produced under license a batch of 9.79 and 5.81 aircraft.

In 1937, Macchi began developing all-metal monoplane fighters. The first of these was the M.S.200 fighter, its deliveries to the spacecraft began in the fall of 1939. Then

followed by the development of fighters M.S.202 (adopted in 1941) and M.S.205 (delivery of the first machines began shortly before Italy's withdrawal from the war).

m.s.200

The single-seat fighter and fighter-bomber M.S.200 "zae a" ("Lightning"), developed under the guidance of the chief designer M. Castoldi, made its first flight on December 24, 1937. In total, at the factories of the Makki, Breda and Ambrosini built 1200 cars, which were equipped with a Fiat A74 RC38 engine with a capacity of 870 hp. With.

In September 1940, two Stormos equipped with MC200 aircraft took part in the fighting in Malta. Heavy aircraft losses in Malta and during the campaign in Greece forced the Italian command to ask for help from the Luftwaffe in order to support the Italian Air Force in the Mediterranean. The M.C.200 fighters suffered heavy losses in North Africa because they outperformed even early versions of the Hurricane fighter in the air. One of the reasons for this was the overweight of African modifications.

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M.S.200 and a decrease in engine power, which was a consequence of the installation of air filters on engines.

About 50 M.S.200 aircraft as part of the 22nd Group of the Italian Expeditionary Force (CSIR) operated on the Soviet-German front in the Odessa region from August 1941, in September they took part in the offensive of the Italian troops on the Dnieper. However, from November 1941 to March 1942, M.S.200 aircraft did not actually take part in combat operations due to severe weather conditions.

By September 1943, a little more than three dozen M.S.200 aircraft, suitable for operation, remained in the spacecraft. Of these, 23 vehicles fell into the hands of the Allies, they took part in the protection of the ships of the Italian fleet, relocated from La Spezia to Malta. Ten machines that remained in the northern part of the country fell into the pro-German AMK, where they were used as training aircraft and did not participate in hostilities.

MC200/VI Features: Crew - 1 person, power plant — 1 engine "On the A74 RC38 with a capacity of 870 hp. With. (649 kW), wing span - 10.58 m and its area - 16.8 m², aircraft length - 8.25 m, height - 3.05 m, weight - 1960 kg, take-off weight - 2395 kg, maximum speed - 504 km/h at an altitude of 4500 m, range - 570 km, time to climb 4000 m - 4.55 min, practical ceiling - 8900 m, armament - two Breda SAFAT machine guns of 12 caliber, 7 mm and two 150 kg bombs.

MC202

Fighter M.S.202 "Folgore" ("Thunderbolt") was developed on an initiative basis under the leadership of M. Castoldi and was a further development of the M.S.200 fighter. The spacecraft became interested in the aircraft, and the company was awarded a contract for its mass production. Initially, the fighter was equipped with the Fiat A74 RC38 engine, but BCKOpe replaced it with the Alfa Romeo KA 1000 KS411 engine with a capacity of 1075 hp. With. (It was a German OV 601 engine produced in Italy under license).

The first flight of an experimental machine took place on August 10, 1940, in the summer of the following year, serial machines were already standing

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in service with the 1st stormo, which was relocated to Libya in November. In May 1942, four more stormos with M.S.202 fighters were transferred from Sicily to Libya. At the same time, a separate unit of photo-reconnaissance MC202 was formed in Sicily. In the spring of 1942, the 21st group,

equipped with M.S.202 and M.S.200 fighters, it was transferred to the Soviet-German front to replace the 22nd group from the CSIR. There, until January 1943, the M.S.202 aircraft carried out the tasks of gaining air superiority, supporting troops and attacking.

At the time of Italy's withdrawal from the war, only 122 MC202 aircraft remained, of which only 53 were combat-ready. Some of them ended up in the sector occupied by the allies, and became part of the allied Italian air force. In particular, they were in service with the 4th and 5th storms, which were soon re-equipped with R-39 aircraft. Those M.S.202 aircraft that remained at the northern airfields became part of the RSI aviation, but they were used only as training ones. For the period 1941-1943, about 1500 MS202 were produced, from Hux 392 machines by McKee, and the rest under license by Breda in eleven practically similar series.

Characteristics of M.S.202/1: crew — 1 person, power plant — 1 Alfa Romeo 1000 RC411 engine with a capacity of 1075 hp. With. (802 kW), wingspan - 10.58 m and its area - 16.8 m², aircraft length - 8.85 m, height - 3.5 m, empty weight - 2490 kg, take-off weight - 2930 kg, maximum speed — 600 km/h at an altitude of 5600 m, range — 610 km, time to climb 5000 m — 4.6 min, practical ceiling — 11,500 m, armament — two 12.7-mm Vickers machine guns and two 7.7 mm machine guns.

MC205

The MC205 "Veltro" ("Borzoï") aircraft became the best Italian fighter of the Second World War, before the capitulation of Italy, 262 machines of this version were built. The first prototype MS205 made its first flight on April 19, 1942 at the air base in Lonate Pozzolo. Comparative tests of three aircraft (M.S.205, Me 205 and S. 55) display

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whether that the MS205 was faster than its competitors at medium and low altitudes. However, at altitudes above 8000 m, the performance of the aircraft deteriorated significantly compared to the performance of competitors.

Another shortcoming was the low rate of production - only 1.5 planes per day. This was partly due to the bombing of aircraft factories and partly due to difficulties in obtaining materials and raw materials. Under such conditions, there was nothing left but to remove the units or parts of the structure from unserviceable aircraft and use them in the design of machines under construction. The first samples of M.S.205 entered the troops just three months before the Allied landing in Sicily. After the capitulation of Italy, several of the 66 surviving M.C.205 aircraft fought on the side of Germany, in particular, as part of JG 77.

Characteristics of M.S.205: crew - 1 person, power plant - 1 engine "Pac" KA1050 RC58 with a capacity of 1475 liters. With. (1100 kW), wing span - 10.58 m, its area - 16.8 m², aircraft length - 8.85 m, height - 3.5 m, empty weight - 3408 kg, takeoff weight - 4235 kg, maximum speed — 642 km/h at an altitude of 7200 m, cruising speed — 580 km/h, range — 985 km, service ceiling — 11,000 m, armament — two 12.7 mm machine guns and two 20 mm cannons.

"Meridionali"

Meridionali (Officine Ferroviarie Meridionali) began its work in 1923 in Naples with the production of licensed Fokkers. For several years the company operated under the name Romeo (Società Anonima Industrie Aereo-nautiche Romeo). In 1935, it was acquired by Breda, after which, in 1936, Romeo was renamed IMAM ("Industrie Meccaniche e Aeronautiche Meridionali").

Ro.37

In 1934, the production of the two-seater Ro.37 biplane began, equipped with a 700 hp Fiat A30 RA engine. With. and intended for use as

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fighter and scout. Subsequently, a modification of the Ro.37bis was released, equipped with a Piaggio PIX or PX engine. Both models were popular at the time. A total of 160 Ro.37s and 475 Ro.37bis were produced, some of which were exported to Afghanistan, Hungary, as well as to the countries of Central and South America.

Ko.37 and Ro.37bis took part in the Spanish Civil War from October 1936, in addition, they were widely used in 1935-1936. during the Italo-Zfioipian war. About 275 Ro.37bis were in service with the Regia Agopashis when Italy entered the Second World War, they were fighting in Africa and the Balkans.

Characteristics of Ro.37bis: crew - 2 people, power plant - 1 Piaggio PIX RC40 engine with 560 horsepower. With. (418 kW), wingspan - 11.08 and their area - 31.35 m², aircraft length - 8.56 m, height - 3.15 m, empty weight - 1585 kg, take-off weight - 2420 kg, maximum speed - 330 km/h at an altitude of 5000 m, cruising speed - 250 km/h, range - 1120 km, service ceiling - 7200 m, armament - three 7.7-mm machine guns and 180 kg of bombs under the wing.

Q.41

Biplane versions Ko.41 (single) and Ko.41V (double) were used in spacecraft for training pilots and as a communications aircraft. On the eve of the war, a batch of aircraft was delivered to Hungary. After the surrender, the aircraft was in service with the Air Force of liberated Italy, and was also used in Luftwaffe flight schools. The total number of Ro.41s built was 437.

Characteristics Ko.41: crew - 1 man, power plant — 1 engine "Piaggio" RUP C45 with a capacity of 425 liters. With. (317 kW), wingspan - 8.81 m, their area - 19.15 m², aircraft length - 6.7 m, height - 2.65 m, empty weight - 980 kg, take-off weight - 1250 kg, maximum speed - 325 km/h, cruising speed - 290 km/h, range - 600 km, time to climb 4000 m - 6.4 min, service ceiling - 8200 m, armament - two 7.-mm machine guns "Breda- SAFAT.

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Ro.43

The Ro.43 ship ejection reconnaissance biplane, which was a float version of the Ro.37bis land reconnaissance aircraft, was developed in 1936. Serial production was carried out at the IMAM plant in Naples from 1937.

Ko.43 stood on the catapults of all cruisers and battleships of the Italian fleet, they participated in the invasion of Greece. Also used by the Italians from coastal bases as single-seat fighters, this version was published under the designation Ko.44. In total, about 200 machines of both modifications were built.

Characteristics Co.43: crew - 2 people, power plant - 1 Piaggio PXE engine with a capacity of 700 hp. With. (522 kW), wingspan - 11.6 and their area - 33.36 m², length of the aircraft - 9.71 m, height - 3.5 m, empty weight - 1780 kg, takeoff weight - 2400 kg, maximum speed — 300 km/h At an altitude of 2500 m, cruising speed — 250 km/h, range — 1500 km, service ceiling — 6600 m, armament — two 7.7-mm Vgeda-5ARAT machine guns.

Ro.57

The first flight of the twin-engine fighter-interceptor Ko.57 took place in May 1939. During operation, it turned out that the aircraft was inferior in combat to single-engine fighters, so it was reoriented to use as a fighter-bomber and attack aircraft. For this purpose, in 1941, a version of the dive bomber and attack aircraft Ko.57015 was developed with two additional 20 mm guns. The first serial Ko.5 7615 entered service in 1943 with the 97th separate group defending Rome. A total of 50 cars were built.

Characteristics Ko.57: crew - 1 person, power plant — 2 Fiat A74 RC38 engines with a capacity of 900 hp each. With. (671 kW), wing span - 12.5 m and its area - 23.0 m², aircraft length - 8.8 m, height - 2.9 m, empty weight - 3490 kg, takeoff weight - 4990 kg, maximum speed - 500 km / h at an altitude of 5000 m, cruising speed - 390 km / h, range - 1200 km, service ceiling - 7800 m, armament - two 12.7-mm Vgeda-5ARAT machine guns and 500 kg of bombs.

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Ro.63

Light communications and surveillance aircraft Ro.63 was put into service in 1941. It was used in Gunis and Sicily. The total number of aircraft built was 6 copies.

Characteristics of Co.63: crew - 1-2 people, power plant - 1 engine "Higyh" NM 5080 with a capacity of 260 hp. With. (194 kW), wingspan - 13.5 m, aircraft length - 9.6 m, height - 2.35 m, takeoff weight - 1060 kg, maximum speed - 203 km/h, range - 900 km.

"Nardi"

FN305

Founded in Milan by the brothers Zuste, Zlio and Luigi Nardi, Nardi (Fratelli Maga) built its first FN305 aircraft in 1934. A prototype two-seat aircraft powered by a 200 hp Fiat A705 engine. with., first took off on February 19 of the following year. It was followed by two more experimental aircraft: a single-seat training fighter and a two-seat aircraft for basic flight training.

In 1937, serial production of the FN305 aircraft with the Alfa Romeo 115-1 engine began at the Nardi and Piaggio factories. In 1938, export deliveries of FN305 aircraft began to Chile (9 aircraft) and Rurnia (31 aircraft). Subsequently, Romania purchased 21 more FN305 aircraft, and then began licensed production of these machines at the TAK plant, where 124 copies were built. An order for the supply of 300 machines was received from France, but before Italy declared war on France in June 1940, only 41 copies were delivered to the French Air Force. A batch of 50 vehicles was purchased by Hungary.

Characteristics of the FN305: crew - 2 people, power plant - 1 Alfa Romeo 115-1 engine with a capacity of 185 hp. With. (138 kW), wing span - 8.47 m and its area - 12.0 m², aircraft length - 7.0 m, height - 2.1 m, takeoff weight - 900 kg, maximum speed - 310 km / h, cruising speed - 290 km/h, range - 500 km, service ceiling - 6500 m, armament - one 7.7-mm machine gun.

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FN310

The four-seat tourist and ambulance aircraft FN310 was developed in 1936, and in 1938 it was already in service with the RA. During the war it was used as a liaison and ambulance aircraft.

Characteristics of E.M.310: crew - 1 person, power plant - 1 Fiat A705 engine with a capacity of 205 liters. With. (153 kW), wing span - 10.0 m and its area - 16.0 m, aircraft length - 7.0 m, height - 2.2 m, empty weight - 650 kg, takeoff weight - 1148 kg, maximum speed - 300 km / h, range - 1400 km, practical ceiling - 6000 m.

FN315

The first flight of the FN315 aircraft, which was a further modification of the FN305 aircraft, took place on July 10, 1938. After completion of the tests, the aircraft was put into production in two versions - a two-seat training and tourist aircraft. The aircraft was delivered to Hungary, Romania and Switzerland, in the latter it was used to train pilots.

Characteristics of FN315: crew - 2 people, power plant - 1 engine "Alfa Romeo" 115-1015 with a capacity of 206 liters. With. (154 kW), wing span - 8.47 m, its area - 12.0 m², aircraft length - 7.0 m, height - 2.1 m, take-off weight - 1045 kg, maximum speed - 315 km / h, range - 740 km, service ceiling - 6200 m, armament - one or two 7.7-mm machine guns.

FN316

The FN316 training fighter for advanced flight training was created on the basis of the FN305. The prototype took off for the first time in the autumn of 1941. It was serially built in two versions - a single-seat aircraft with a closed cockpit (E.M.316M) and a two-seat aircraft with an open cockpit (FN316B). From January 1942, FN316M machines began to arrive at flight schools, and from June 1943, FN316B machines began to arrive. After the capitulation of Italy, a number of FN316s continued to be used by the Luftwaffe in northern Italy. The total number of FN316 aircraft built was 50 examples.

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Characteristics of FN316M: crew - 1 person, power plant - 1 Isotta Fraschini engine RC10 IZ 270 HP With. (201 kW), wingspan - 8.47 m and area - 12.0 m, aircraft length - 7.0 m, height - 2.1 m, maximum speed - 330 km/h, range - 740 km, practical ceiling - 6500 m, armament - one or two 7.7-mm machine guns.

"Novaresi"

FC20

The development of the FC20 multi-purpose fighter began at the Novaresi company (CANSA - Costruzioni Aeronautiche Novaresi SA) in 1940. The prototype aircraft, made in the reconnaissance bomber version, first took off on April 12, 1941, but the test results were unsuccessful.

The second prototype of the aircraft, designated E.S.2061F, was made in a fighter-bomber version. Testing and refinement of the aircraft were carried out until the spring of 1943. In April, an experienced FC20bis fighter took part in combat operations for the first time, attacking an American bomber. After that, the company received an order for a series of 10 aircraft, which were built by August 1943. The first three aircraft were delivered to the 173rd reconnaissance squadron RST (Ricognizione Strategica Terrestre), and the FC.20bis prototype was donated to B. Mussolini.

Since the summer of 1943, work has been underway to create a version of the aircraft under the designation FC20ter, equipped with Fiat A80 KS41 engines with a capacity of 1000 hp each. However, the plane did not have time to fly around before the capitulation of Italy. The total number of E.S.20 aircraft built was 12 examples.

Characteristics of FC20bis: crew - 2 people, power plant - 2 Fiat A74 RC38 engines with a capacity of 900 hp each. With. (671 kW), wingspan - 16.05 m, its area - 40.0 m², length

aircraft - 12.2 m, height - 3.81 m, empty weight - 4725 kg, take-off weight - 6820 kg, maximum speed - 420 km/h, cruising speed - 340 km/h, range - 1150 km, practical ceiling - 8000 m, armament - one 37-mm cannon, three 12.7-mm machine guns and 572 kg of bombs.

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"Piaggio"

The company was founded in 1884 by Rinaldo Piaggio. During the First World War, Piaggio was engaged in the repair of seaplanes and the manufacture of spare parts for them. She soon joined the Ca.5 Aircraft program, but only a few aircraft in the flying boat variant were produced. In 1921, R. Piaggio, using personal connections, helped to found the SMABA company, on which C. Dornier built his Wal seaplanes, bypassing the prohibitions of the Versailles Treaty. Part of the Wal aircraft was assembled at the Piaggio company; they were operated by the SANA airline, established in 1924 with the participation of Piaggio.

In 1923, R. Piaggio actually began to manage the Revpa-Voptagi company, hiring its chief designer, Giovanni Peña. Many aircraft designs were developed under Peña's direction, including the PC 7 racing seaplane, but Piaggio's main products were the licensed SIAI Magister seaplanes. In 1924, the production of licensed Bristol Jupiter engines began, and later the Spite-Kyöpe 14K. In 1937-1939 Piaggio-powered aircraft set 21 records, including the Ca.161bis world altitude record. In 1936, Giovanni Casiraghi, who had previously worked in the American aircraft industry, replaced Peña as chief designer of the firm, under his leadership the four-engine P.108 bomber was developed.

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P.32

The R.32 aircraft was a medium bomber with a spaced tail. It turned out to be unsuccessful in operation, so during the war it was used for auxiliary purposes. A total of 29 specimens were built.

Characteristics of R.32: crew - 5 people, power plant - 2 Isotta-Fraschini engines Asso XI RC40 with 860 hp each. With. (642 kW), wing span - 18.0 m and its area - 60.0 m², aircraft length - 16.3 m, height - 5.1 m, empty weight - 5740 kg, takeoff weight - 7335 kg, maximum

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speed — 400 km/h at an altitude of 5000 m, time to climb 4000 m — 15.0 min, service ceiling — 7000 m, armament — two 7.7 mm Breda machine guns and 1600 kg of bombs.

P.108

In 1939, the Piaggio firm developed the R.108 long-range bomber, equipped with four Piaggio PXHI RC 35 engines. The first flight of the prototype took place on November 24, 1939. After some refinement, 20 aircraft were produced under the designation R. 108B, which were intended for a group of long-range bombers, consisting of the 274th and 275th squadrons. The commander of the 274th Squadron was Bruno Mussolini, the son of the dictator.

The first P.108B bomber entered the 274th squadron on July 19, 1942, after which the crews began training flights. In one of the flights, the bomber crashed, out of the eight members of the crew, two died, and among them Bruno Mussolini. Due to the slowdown

bomber squadron The 274th Squadron remained the only spacecraft unit that had the R.108V in service. By June 1942, when the bomber crews began to carry out combat missions, the squadron had only five aircraft in its composition. In early June, bombers flew several times to search for British ships in the Mediterranean, but to no avail. On June 28, five P.108Bs took off from an air base in Sardinia, heading for Gibraltar for a night bombardment. Soon one of the bombers returned due to engine problems, and the remaining four successfully reached the target, bombing the Gibraltar airfield. On the way back, due to the complete exhaustion of fuel, three cars made an emergency landing in Spain, and only one car managed to reach its base. Night bombardments of Gibraltar were carried out in September and October, with the loss of two

cars.

From the end of October 1942, the squadron carried out a number of reconnaissance flights over the Mediterranean Sea, and in November, it participated in the bombing of the allied forces, which began landing on November 8 in North Africa. The bombing resumed in January 1943, and in early February the 274th

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The quadrille was recalled from Sardinia to repair its aircraft and rest the crews.

The prototype of the P.108A anti-ship bomber, first flown on March 3, 1943, was equipped with a 102 mm cannon. After its successful tests, it was planned to build five P.108A aircraft, install the same guns on the six existing P.108Bs, and form a special squadron based on these aircraft to fight the Allied fleet. However, the exit of Italy from the wars in September 1943 frustrated these plans, and the R.108A remained in the only instance.

The 248th Separate Transport Squadron included R.108C passenger vehicles, each of which was intended to transport 56 paratroopers. For cargo transportation, a transport version of the R.108T was developed.

After Italy left the war, Germany received eight P.108Bs, six P.108Cs, and a copy of P.108A with 102 mm gun. Due to low reliability, not a single P.108B bomber was involved in combat operations in the Luftwaffe COCTaBe, although two P.108Bs were used in Krgma as transport aircraft, and the P.108A aircraft was tested at the test center in Rechlin. The R.108C vehicles were transferred to the 5th Luftwaffe Transport Squadron. After that, five R.108G vehicles were added to them, assembled by order of the Luftwaffe at the Piaggio plant (which remained in the territory controlled by the Nazis). All Italian aircraft were modified according to German standards and added four MG 131 machine guns each. The modified aircraft performed the tasks of transporting cargo in the Mediterranean, Norway and on the Soviet-German front. However, by March 1945, only three R.108s remained in the 5th transport squadron, which were soon destroyed on the ground by the advancing Anglo-American troops. The total number of R.108 aircraft built was 47.

Characteristics of R.108V: crew - 7 people, power plant - 4 Piaggio RHI EC35 engines with a capacity of 1500 hp each. With. (1119 kW), wing span - 32.0 m and its area - 135.34 m², aircraft length - 22.2 m, height - 6.0 m, empty weight - 18,850 kg, take-off weight - 29 885 kg, maximum weight

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height - 427 km / h At an altitude of 4200 m, cruising speed - 320 km / h, range - 3600 km, climb time 5000 m - 21.1 min, practical ceiling - 8600 m, armament - five 12.7-mm machine guns "Breda-SAFAT" and 3500 kg of bombs or three 450-mm torpedoes.

"Reggiana"

The company Officine Meccaniche Reggiane 5.A., whose factory was located in Reggio Emilia, began its activity in the aircraft industry during the First World War with the construction of licensed bombers of the Caproni company. In 1935, it became part of the Caproni company, the record-breaking Ca.405 aircraft became the first product, while licensed bombers Piaggio R.32518 and Savoy-Marchetti 5.M.79 were produced in parallel.

Re.2000

The Re.2000 "Falko 1" fighter prototype first took off on May 24, 1939. During testing, the aircraft showed good performance in terms of speed and maneuverability. After completion of tests with weapons, the prototype was delivered in August 1939 to the research institute of the Italian Air Force for comparative tests with the M.S. 200.

However, as a result of comparative tests, the representatives of the spacecraft chose for mass production a car made by the Mackie company, although the Ke.2000 surpassed even the Bf 109E in maneuverability. Nevertheless, Hungary bought a license for the production of Ke.2000, a batch of fighters was also purchased by Sweden. In addition, the Italian fleet ordered the construction of 12 Ke.2000 series P vehicles with a reinforced structure for launching from a catapult and 24 Ke.2000 series III vehicles with an increased fuel reserve for use as long-range fighters.

At the beginning of 1941, 5 machines intended for export were included in the 3rd storm. In August of the same year, the 377th separate fighter squadron was formed, which carried out patrols and covered convoys, in March 1942 the squadron was transferred to the air defense forces

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genus Palermo. The total number of Ke.2000 aircraft built was 349 examples.

Characteristics Ke.2000/1: crew - 1 man, power plant — 1 Piaggio PXI RC40 engine with 960 hp With. (716 kW), wingspan - 11.0 m, area - 20.4 m², aircraft length - 7.99 m, height - 3.2 m, empty weight - 2090 kg, take-off weight - 2850 kg, maximum speed — 541 km/h at an altitude of 5000 m, cruising speed — 430 km/h, time to climb 4000 m — 6.1 min, range — 1400 km, service ceiling — 10,500 m, armament — two 12.7 mm machine gun "Vgeda-5ARAT".

Re.2001

The prototype of the Re.2001 "Falco P" fighter was a co-variant of the Ke.2000, equipped with a German DB 601A-1 engine. After testing two experimental machines, a pre-production batch of 10 aircraft equipped with the Alfa Romeo KA1000 RC41-la engine was ordered. The first combat use of the Ke.2001 took place in Malta in 1942. Due to a shortage of engines, the number of built Ke.2001 fighters was limited to 252 copies (series I, P, PI and GU, as well as night bombers Ke.2001 CN) .

Characteristics Ke.2001/PI: crew - 1 man, power plant - 1 Alfa Romeo KA 1000 KSA1-1a engine, 1175 hp. With. (876 kW), wingspan - 11.0 m and its area - 20.4 m², aircraft length - 8.36 m, height - 3.15 m, empty weight - 2495 kg, take-off weight - 3280 kg, maximum speed — 542 km/h at an altitude of 4,000 m, cruising speed — 469 km/h, range — 1,040 km, service ceiling — 11,950 m, armament — two 12.7-mm Vgeda-5ARAT machine guns and two 7.9-MM machine gun "Vgeda-5AKAT".

Re.2002

Fighter-bomber Ke.2002 "Ariete" ("Taran") was a modernized Ke.2001 fighter. The first flight of the prototype took place in October 1940. In total, about 50 examples were produced, which entered the Regia Aeronautica in 1942. They suffered heavy losses during the opposition to the Allied landings in Sicily.

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Characteristics of Ke.2002: crew - 2 person, power plant - 1 engine "Ragno" PXIX KS45 with a capacity of 1180 liters. With. (880 kW), wingspan - 11.0 m and its area - 20.4 m², aircraft length - 8.16 m, height - 3.15 m, empty weight - 2390 kg, take-off weight - 3240 kg, maximum speed - 550 km / h at an altitude of 5500 m, cruising speed - 400 km / h, range - 1100 km, time to climb 2000 m - 1.0 min, service ceiling - 10,500 m, armament - two 12.7 mm machine gun "Vgeda-5ARAT", two 7.7 mm machine guns "Breda-SAFAT" and 500 kg of bombs.

Re.2005

Fighter Ke.2005 "Sagittario" ("Sagittarius") had the same general configuration as its predecessors. The Ke.2005 made its first flight in September 1942 with an OV 605A-1 engine, while the Ke.2005 serial samples, the deliveries of which began in 1943, were equipped with licensed Fiat KA 1050 KS58 engines. The company managed to build a total of 48 aircraft before the surrender of Italy, these aircraft took part in the defense of Naples, Rome and Sicily, several surviving aircraft defended Berlin.

Characteristics Ke.2005: crew - 1 man, power plant - 1 engine "On" the spacecraft! 050 KS58 with a capacity of 1475 liters. With. (1100) kW, wing span - 11.0 m and its area - 20.4 m², aircraft length - 8.73 m, height - 3.15 m, empty weight - 2600 kg, takeoff weight - 3560 kg, maximum CKO height - 630 km/h At an altitude of 6950 m, time to climb 2000 m - 1.51 min, range - 1265 km, practical ceiling - 12 190 m, armament - three 20-mm guns and two 12, 7-MM forward-firing machine gun, up to 630 kg of bombs (in the fighter-bomber version).

Re.2007

In October 1943, the firm began designing the OL, a local jet fighter Ke.2007, which was supposed to be powered by the German Leto 004B engine. By the summer of 1944, the experimental aircraft was practically assembled, but the company never received the engine. In October, the aircraft was transported to the plant in Taliedo,

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where it was kept until the end of the war, and then the Americans took it to the USA as a trophy.

Characteristics of Re.2007: crew - 1 man, power plant — 1 engine «Junkers» Leto 004B with a thrust of 900 kgf, wingspan — 9.5 m, aircraft length — 9.0 m, height — 2.93 m, empty weight — 2500 kg, takeoff weight — 3540 kg, maximum speed — 1050 km / h, range - 1500 km, practical ceiling - 15,000 m, armament - four 20-mm guns.

"Savoie Marchetti"

In August 1915, SIAI ("Societa Idrovolanti Alta Italia") was founded. Its founders were Luigi Kane, the owner of a sawmill, and Domenico Lorenzo Santoni, who had a patent for his aircraft "Savoia", named after the Italian royal family. Soon SIAI became the owner of a flight training school and began building seaplanes designed by Raffaele Conflenti, including the 5.12, which won the Schneider Cup in 1920, and the 5.16, which flew to Australia in 1925. This was followed by aircraft 5.59, 5.62 and 5.78, which formed the basis of the Italian naval aviation.

After Santoni and Conflenti moved to France in 1920, Kane invited Alessandro Marchetti, who eventually acquired a stake in the company, and in 1937 the company became known as Savoy Marchetti. Starting with the SM51 racing aircraft, Marchetti launched a number of new projects, the most famous of which was the SM55 flying boat, which made in 1930-1933. transatlantic flights, transport aircraft SM73 and bomber SM81,

widely used in Ethiopia and Spain. In order to expand production, SIAI built a new factory and airfield in Vergiate in 1938.

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A prototype passenger aircraft SM75, designed to carry 24-30 passengers, first flew on November 6, 1937. The first five production aircraft,

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equipped with Alfa Romeo 126 RC34 engines were supplied to Ala Littoria.

Soon, the production of the SM75bis military transport aircraft with Alfa Romeo 126 RC18 engines began, in which the vertical tail was reduced and an upper machine-gun turret was installed. In 1939, several examples of the SM75 were produced under license in Hungary, these aircraft were equipped with Spote-VPbpe 14K engines.

Since 1940, all produced SM75 aircraft were used for military purposes, they received the name "Marsupiale". Some of the machines were modernized, their engines were replaced by more powerful "Piaggio" RC40. After 1943, SM75 aircraft were used by both the Luftwaffe and the Italian Air Force, which fought on the side of the Allies. The total number of SM75 aircraft produced was 100 copies.

Characteristics of 5.M.75: crew — 3 people, power plant — 3 Alfa Romeo engines 126 RC34 with 780 hp each. With. (582 kW), wing span - 29.7 m and its area - 118.6 m², aircraft length - 21.6 m, height - 5.09 m, empty weight - 9500 kg, takeoff weight - 14 500 kg, maximum speed - 368 km/h at an altitude of 3070 m, cruising speed - 325 km/h, range - 1417 km, practical ceiling - 7000 m, armament - one 20-mm cannon MS 151, two 12, 7-mm machine gun "Vgeda-5ARAT" and 160 kg of bombs.

5.78

The 5.78 biplane flying boat was created in 1932. In the first months of the war, it was used to a limited extent for reconnaissance, later it was transferred to BO auxiliary units.

Characteristics 5.78: crew - 3 people, power plant - | Isotta-Fraschini engine Asso RC35 900 hp With. (671 kW), wingspan - 16.66 and their area - 69.5 m², aircraft length - 12.26 m, empty weight - 2950 kg, take-off weight - 5050 kg, maximum speed - 245 km / h, cruising speed — 200 km/h, range — 2500 km, time to climb 4000 m — 28.0 min, armament — two 7.7 mm machine guns and 600 kg of bombs.

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5.M.79

Medium bomber 5.M.79 "Sparviero" ("Bopobey") became a military version of the eight-seat passenger aircraft SM79P, developed in 1934 under the leadership of A. Marchetti. The first prototype SM79P flew from Milan to Rome on June 14, 1935 at an average speed of 409 km/h. The following year, the same car set a world record, reaching an average speed of 419.8 km/h on a 1,000 km circuit with a load of 2,000 kg.

Bomber 5.M.79, equipped with three Piaggio PXI KS40 engines with a power of 1000 hp each. c., was adopted by the spacecraft in 1937 and immediately sent to Spain to participate in hostilities as part of the Italian division "Aviacion del Tercio". Also in 1937, 5.M.79 nc- was tried as a torpedo bomber capable of carrying one torpedo under the fuselage. The following year, the second modification 5.M.79-P, capable of carrying a pair of torpedoes, was adopted as the standard torpedo bomber.

At the time of Italy's entry into the war, these torpedo bombers were in service with fourteen stormos based in Italy, Sicily, Sardinia and Libya. The first combat use of the SM79 took place on June 13-14, 1940, when 19 vehicles from the 9th and 46th Stormo attacked French ships off the coast of the Riviera. Torpedo bombers from the 92nd group and the 28th squadron first acted against the Allied ships in the Aegean Sea, and then were transferred to Libya, from where they flew out to attack British convoys in the Central Mediterranean. So, for example, during the attack of a sea convoy en route with cargo to Malta, the English destroyers Husky, Jaguar, Legion and Southwall were sunk. However, despite the fact that the SM79 aircraft were recognized as the best among the Mediterranean torpedo bombers, they, like many other types of Italian aircraft, suffered very heavy losses.

After the capitulation of Italy, 97 combat-ready SM79 aircraft remained, of which 22 aircraft ended up in the ranks of the allied Italian Air Force, where they served as bombers, torpedo bombers and transporters. Machines, dis

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stationed in the German-occupied zone became part of the RSI aviation. Being in service with groups of torpedo bombers, these 5.M.79 delivered numerous strikes against allied ships in the Mediterranean.

One of the 5.M.79 bombers was converted into a projectile. The aircraft loaded with explosives took off under the control of a pilot on the night of June 4-5, 1944 and headed for Gibraltar in order to attack the British ships stationed there. In a given area, the pilot changed control of the aircraft and then jumped out of the car with a parachute. The projectile aircraft continued its flight, remotely controlled from the accompanying Cant Z.1007-II aircraft. However, the attack failed, because due to a defect in the radio control system, the projectile crashed before reaching the target. Nevertheless, work in this direction was continued, and a prototype wooden projectile was built at the Ambrosini company, which passed flight tests in June 1943.

5.M.79 was exported: in 1938, 4 vehicles were purchased by Iraq, 3 vehicles were delivered to Brazil, 48 vehicles were sold to Romania. In addition to Toro, Romania bought a license to manufacture an aircraft under the designation JRS 79. These bombers were used in the operations of the Romanian troops against the USSR. 45 copies of 5.M.79 were purchased by Yugoslavia, they equipped the 7th air wing and the 81st separate group of the Yugoslav Air Force. During the battles of 1941 with the German and Italian troops, most of the Yugoslav bombers were lost, the Germans handed over a few surviving aircraft to the Croatian Air Force. A total of 1,330 copies of Sparviero were produced between 1935 and 1944.

Characteristics 5.M.79 / X1: crew - 5 people, power plant - 3 Piaggio PXI RC40 engines with a capacity of 1000 hp each. With. (746 kW), wing span - 21.2 and its area - 61.7 m², aircraft length - 16.2 m, height - 4.1 m, Bec empty Toro - 7600 kg, takeoff Bec - 11 300 kg, maximum speed - 435 km / h At an altitude of 3650 m, range - 2000 km, practical ceiling - 7000 m, armament - three 12.7-mm Vgeda-5ARAT machine guns, one 7.7-mm machine gun "Lewis" and 1250 kg of bombs or two 450-mm torpedoes.

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5.m.81

In 1935, the SM81 "Pipistrello" ("Bat") bomber was developed, which was a combat version of the 5.M.73 transport aircraft. The SM81 bomber was very effective in combat operations in Ethiopia and Spain, it remained in service until 1937, when it began to be replaced by the more promising SM79 bomber. In March 1938, some of the SM81 machines began to be converted into transport aircraft capable of carrying 18 people, as well as personal aircraft for VIPs.

Personal aircraft SM81 were allocated to the king, the dictator B. Mussolini, the chief of staff of the Air Force and several other officials. All personal vehicles were brought together in a special squadron based at the Centocelle airfield near Rome.

At the time of Italy's entry into the war, only 304 aircraft of this type were in the spacecraft, of which 147 aircraft were in service with units in Italy, on the islands in the Aegean Sea and North Africa, 59 aircraft in East Africa, and the rest in transport units. Aircraft from East Africa were the first to enter combat operations, taking part in attacks on convoys and bombardment of British military bases. The 5.M.81 bombers suffered heavy losses, by February 1941 only 6 combat-ready vehicles remained in East Africa. In January 1942, one SM81 squadron from the Italian Expeditionary Force CSIR was based near Bucharest, and two other squadrons were based in Stalin (Donetsk) in the USSR. In the winter of 1942/43, almost all 5.M.81s that took part in the hostilities on the Soviet-German front were lost. In 1943, the troops began to receive an improved version of the 5.M.81 / T with Piaggio PX RC35 engines. Onna-ko at the time of the capitulation of Italy, only 80 of these machines were built, and only four of them remained in the south as part of the allied forces. In the northern part of Italy, controlled by the fascists, two transport squadrons were formed. The aircraft of these squadrons, which had Luftwaffe markings and Italian tricolors on the front of the fuselage, operated in Poland,

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Czechoslovakia and Austria, supplying German troops on the Soviet-German front. The few remaining 5.M.81s in Italy were in communications squadrons, one of these aircraft was used as Mussolini's personal transport. This machine, sometimes piloted by the dictator himself, was known as the Gagashra (Turtle). The total number of vehicles built was 534 units.

_ Characteristics of 5.M.81/T: power plant — 3 Piaggio PX RC35 engines with power 670 l. With. (500 kW), wing span - 24.0 m and its area - 92.8 m², aircraft length - 17.8 m, height - 4.45 m, empty weight - 5800 kg, take-off weight - 10,500 kg, maximum speed - 340 km/h at an altitude of 1000 m, range - 2000 km, practical ceiling - 7000 m, armament - five 7.7-mm Vgeda-5ARAT machine guns.

5.M.82

The prototype transport aircraft SM82 "Sanguru" ("Kangaroo") made its first flight in 1939. It was a variant of the 5.M.75 aircraft with an increased diameter and length of the fuselage. Equipped specifically for the transport of goods, it had a lifting mechanism for heavy loads and a sufficient volume of the cargo compartment, in which, for example, the SK42 aircraft was freely placed in disassembled form. Aircraft 5.M.82 began to enter the troops in 1941, they were widely used in spacecraft for the transport of cargo and troops, and sometimes as bombers. Several examples were in service with the Luftwaffe. During the war, about 400 SM82s were built.

Characteristics of 5.M.82: crew - 4 people, power plant - 3 Alfa Romeo 128 KS21 engines with a capacity of 950 hp each. With. (708 kW), wing span - 29.68 and its area - 118.6 m², length - 22.9 m, height - 6.0 m, Bec empty Toro - 10,550 kg, takeoff Bec - 18 200 kg, maximum speed - 370 km/h, cruising speed - 289 km/h, range - 3000 km, service ceiling - 6000 m, armament - four 7.7-mm machine guns, one 12.7-mm machine gun and up to 4000 kg of bombs.

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5.M.83

The SM83 passenger aircraft was structurally similar to the 5.M.79 bomber;

exported (3 to Romania and 4 to Belgium), and the rest were purchased by the Italian airline Linee Aeree Transcontinentali Italiane (LATI). In the summer of 1940, LATI aircraft were transferred to the SC.

Characteristics of SM83: crew - 1 person, power plant — 3 Alfa Romeo 126 RC34 engines with a power of 780 hp each. With. (582 kW), wingspan - 21.2 m and its area - 61.7 m², length - 15.8 m, height - 4.3 m, takeoff weight - 11,500 kg, maximum speed - 444 km/h, practical ceiling - 6350 m, number of passengers - 10.

SM85

The prototype of the 5.M.85 dive bomber made its first flight on December 19, 1936. The aircraft was mass-produced, the number of built machines was 36 examples.

Characteristics of SM85: crew — 1 man, power plant - 2 engines "Piaggio" RUP RC35 with 500 hp each. With. (373 kW), wing span - 14.0 m and its area - 25.8 m², length - 10.4 m, height - 3.3 m, empty weight - 2950 kg, take-off weight - 4190 kg, maximum speed - 368 km/h at an altitude of 4000 m, cruising speed - 310 km/h, range - 827 km, service ceiling - 6500 m, armament - one 12.7-mm or 7.7-mm Vgeda-5ARAT machine gun and 500 kg of bombs.

"Fiat"

Fiat was founded in 1898. Before the First World War, Fiat built several experimental aircraft and aircraft engines. The first produced A.10 engine (1915) had a power of about 100 hp. s., in 1916, the production of more powerful A.12 engines began, the number of which amounted to more than half of all produced

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nyh during the war years of Italian engines. In 1915, the army offered the company to build a biplane Farman M.E.1 1, therefore, a year later, Fiat opened an aircraft manufacturing branch called S.I.A. However, the aircraft built in the branch (SIA.7, 51A.9, SIA.14, etc.) were so unsuccessful in their characteristics that in June 1918 the army command demanded that aircraft with the designation "SIA".

In 1925, Fiat bought Aeronautica Ansaldo, which became its aircraft division under the new name Aeronautica 9 PaPa. Aircraft engines continued to be produced under the designation "Fiat", they were equipped with all types of aircraft, including the record C.72 seaplane. Under the leadership of the chief designer Celestino Rosatelli, the first CR1 aircraft was created in 1923; in total, more than 6,000 aircraft of various types were produced under his leadership. A second design bureau was founded in 1931, headed by Giuseppe Gabrielli, whose first production aircraft was the C.50 fighter.

At the start of World War II, Fiat was the largest Italian company, but its contribution to the creation of military equipment was not very impressive. Failure to launch a series of aircraft engines with a power of more than 1000 hp. With. forced the company to acquire a license for the production of the German Daimler Benz DB.605 engine. If the VK20 medium bomber generally corresponded to the world level, then the CR42 fighter, which was widely produced and remained in production until 1943, was considered obsolete by the beginning of the war. The modern G.55 fighter was built in small quantities before Italy left the war. Aircraft production at the firm was interrupted by Allied air raids in March-April 1944, although Fiat still continued to supply engines and spare parts for German industry.

The medium bomber BR20 "Cicogna" ("Stork") was developed by Fiat under the leadership of C. Rosatelli. The first flight of an experimental machine took place on February 10, 1936.

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in Gurin. A year later, the 7th and 13th Stormo of the Italian Air Force, based at the Lonate Pazzolo aerodrome, began to equip with these machines.

In May 1937, several aircraft from the 7th and 13th Storms were sent to Spain to gain combat experience. At the same time, the Japanese government, after testing the BR20 in operations in China, signed a contract with Fiat for the supply of 75 VK20 bombers to Japan. There they took part in the fighting against China, having the Japanese designation "type | model 100". However, the Italian aircraft were not popular with the Japanese crews; they were gradually replaced by Mitsubishi Type 97 bombers.

At the end of 1939, a modernized version of the VK20M bomber appeared, in which the shape of the nose was changed, the fuselage was lengthened, the armor was reinforced and more powerful weapons were installed. At the time of Italy's entry into the war, the Italian Air Force had 162 V.K.20 and V.V.20M vehicles (7, 13, 18 and 43rd Stormo). The first bombardment took place on June 13, 1940, when 19 BR20M aircraft from the 13th Storm attacked targets in the south of France. At the end of September, 80 BR20M aircraft from the 13th and 43rd Storms were sent to Belgium to take part in the Battle of England together with the Luftwaffe. However, already during the ferry flights, several aircraft were lost. Combat missions to bombard the territory of England also did not bring success to the Italians, so by February 1941 both storms returned to Italy, having lost about 20 vehicles during the fighting.

Part of the BR20M aircraft from the 37th Stormo operated from air bases in Albania against Greece, the aircraft of the 38th Stormo from August 1942 took part in combat operations in the southern sector of the Soviet-German front. Subsequently, 15 cars of the improved BR20bis model were produced, which were equipped with two Fiat A82 RC42S engines with a capacity of 1250 hp each. With. and an additional Type-lea with a 7.7 mm machine gun. At the beginning of 1943, the VK20M bombers in the Italian Air Force began to be replaced by Cant Z.1007 and 5.M.79 aircraft. The total number of built BR20 aircraft of all modifications was 602 copies.

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Characteristics of VK20M: crew - 5 people, power plant - 2 "Na" A80 RC41 engines with a capacity of 1000 hp each. With. (746 kW), wingspan - 21.56 m, wing area - 74.0 m², aircraft length - 16.68 m, height - 4.75 m, empty weight - 6500 kg, maximum takeoff weight - 10 100 kg, maximum ground speed — 440 km/h, cruising speed — 340 km/h, time to climb 6000 m — 25 minutes, range — 2750 km, service ceiling — 8000 m, armament — three 12.7 -mm Breda-SAFAT machine gun and a bomb load of 1600 kg.

CR25

In 1935, the CR25 escort fighter and reconnaissance aircraft was developed, equipped with two Fiat A74 RC38 engines. Based on the test results of two prototypes, the aircraft was put into production under the designation CR25bis, this modification was equipped with holders for bombs or external fuel tanks. In 1940, the production of the aircraft was terminated after the production of 12 aircraft, which were used for reconnaissance purposes and for escorting convoys between Sicily and North Africa.

Characteristics of CR25bis: crew - 3 people, power YC-training - 2 Fiat A74 RC38 engines with a capacity of 840 hp each. With. (626 kW), wing span - 16.0 m and its area - 39.2 m², aircraft length - 13.56 m, height - 3.37 m, empty weight - 4375 kg, takeoff weight - 6525 kg, maximum speed - 460 km / h at an altitude of 5550 m, cruising speed - 395 km / h, range

- 2000 km, practical ceiling - 8400 m, armament - three 12.7-mm Vgeda-5ARAT machine guns and 500 kg of bombs.

CR32

The CR32 biplane fighter with the Fiat engine AZOKA was developed in 1933, its power structure was made of aluminum alloys, the lining was linen. In 1933-1938 four main variants of the CR32 were produced. The standard CR32, produced in 350 copies, was equipped with two 12.7 mm machine guns. CR32bis had an improved motor

"Fiat" A30RABis and two additional 7.69-mm machine guns in the lower wing, it was used to a limited extent in

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Spain. The CR32ter and CR32quater versions of the fighter, compared to the standard CR32 aircraft, had improved sights and instrumentation, and a radio was installed on some CR32quater.

A small number of S.K.32s of various modifications were exported to Venezuela, Paraguay, China, Austria and Hungary. By the beginning of the war, CR32 fighters were in service with the 1st and 52nd Stormo in Italy, the 8th and 13th Groups in Libya, the 160th Group in Albania, the 136th Squadron on the islands in the Zgea Sea, 410- yi 411 squadron in East Africa.

Characteristics of CR32ter: crew - 1 person, power plant - | Fiat A30 KA engine, 600 hp With. (447 kW), wingspan - 9.5 m and their area - 22.12 m², aircraft length - 7.4 m, height - 2.63 m, empty weight - 1454 kg, maximum takeoff weight - 1914 kg, maximum speed - 354 km/h at an altitude of 3050 m, time to climb 6100 m - 14.4 min, range - 780 km, service ceiling - 7700 m, armament - two 12.7-MM Breda machine guns -SAFAT.

CR42

The single-seat fighter of the CR42 "Falco" biplane scheme ("Falcon") was actually a development of the CR32 biplane. The experimental aircraft CR42 made its first flight in 1939, it was equipped with an A74 RIC38 "Na" engine.

By September 1939, Falcos were in service with three stormos, and in June 1940 they were already in service with four stormos (1, 3, 4 and 53rd) in the Mediterranean and two squadrons in East Africa (413th and 414th) had 330 vehicles. Falco first saw combat during the French campaign (3rd and 53rd stormos), and later 50 aircraft in the 56th stormo of the Italian air corps (Sogro Aegeo Italiano) were deployed to Belgium to participate in "Battle of England", where they suffered heavy losses from the British fighters "Spitfire" and "Hurricane".

In January 1941, the surviving CR42s were returned to Italy. In the Middle East, the Falco as part of the 4th storm operated more successfully, but after the arrival of the Hurricanes, the loss of Italian biplanes increased sharply. During Gre

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During the campaign, one group of Tpex Squadrons SK42 operated. An additional 51 CR42 fighters were deployed to Africa to replace 36 aircraft lost on the ground and in the air. They operated with the 5th, 15th, and 50th Storms until November 1942, along with a CR42AS fighter-bomber version adapted to carry two 100-kg bombs.

In September 1939, 34 vehicles were purchased by Belgium, 13 of them were destroyed during the German invasion. At the end of 1940, 50 copies of the CR42 were sold to Hungary; they were part of the fighter group 2/11 and took part in the hostilities against the USSR. Sweden

bought 72 vehicles, where after some refinement (installation of armored backs, radio equipment and skis for operation in winter) they received the designation)11. The total number of S.K.42 fighters built by Fiat was 1781, but after Italy left the war in September 1943, only 64 machines were serviceable. Four CR42s flew across the front lines to join the Italian Allied Air Force in southern Italy, while all other vehicles remained in service in the fascist Italian Social Republic in the northern part of the country. In early 1944, one of the Luftwaffe night attack squadrons, 3./NSGr. 7, equipped with S.K.42 vehicles, fought in Czechoslovakia, and then was transferred to the Balkans.

Characteristics of S.K.42: crew - 1 person, power plant - 1 Fiat A74 K1S38 engine with a capacity of 840 hp. With. (626 kW), wingspan - 9.7 m and their area - 22.4 m², aircraft length - 8.26 m, height - 3.05 m, empty weight - 1784 kg, take-off weight - 2295 kg, maximum speed - 441 km/h at an altitude of 6000 m, range - 780 km, time to climb 6000 m - 9.0 min, service ceiling - 10,100 m, armament - two 12.7-mm machine guns "Vgeda- 5ARAT" and two 100-kg bombs.

C.8

The two-seat G.8 biplane, developed in 1934, was used by the spacecraft for training and communications. After the capitulation of Italy, it was used on both sides of the front.

Characteristics of G.8: crew — 2 people, power plant — | engine "Fiat" A54 with a capacity of 140 liters. With. (104 kW),

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wingspan - 8.76 and their area - 18.91 m², aircraft length - 6.83 m, height - 2.61 m, empty weight - 570 kg, take-off weight - 850 kg, maximum speed - 215 km/h, cruising speed — 187 km/h, range — 770 km, service ceiling — 5000 m, armament — two 7.7 mm machine guns.

5.12

In 1941, Fiat built three examples of the C.12C passenger aircraft, powered by three Fiat A74 RC42 engines. This aircraft could carry 14 passengers. Soon, the spacecraft received a G.12 Gondar transport aircraft with a long flight range, designed to work on communication lines with the Italian colonies in East Africa.

The HMM was followed by transport aircraft versions G.12GA, G.12 KG (1 copy), G.12RTbis (1 copy) and G.12T. The main military variant was the G.12T. Its tasks included the implementation of regular transport between Italy and North Africa. Aircraft 0.12 CT and G.12RTbis were intended for flights between Rome and Tokyo, the first had a range of 8000 km, and the second 9000 km.

Characteristics of the C 12T: crew - 4 people, power YC-tank - 3 "Na" A74 RC42 engines with a capacity of 770 hp. With. (574 kW), wingspan - 28.5 m, its area - 122.96 m², aircraft length - 20.1 m, height - 4.9 m, empty weight - 9280 kg, take-off weight - 15,000 kg, maximum speed — 390 km/h at an altitude of 5000 m, cruising speed — 310 km/h, range — 2300 km, service ceiling — 8500 m, armament — two 7.7 mm machine guns.

G.50

Fighter G.50 "Freccia" ("Arrow"), equipped with a Fiat A74 RC38 engine with a capacity of 840 hp. c., was developed in 1935-1936. under the direction of Giuseppe Gabrielli. The prototype 0.50 made its first flight on February 26, 1937 rT., according to the results of its testing, the company received an order for 45 aircraft in the summer. In October, Toro of the same year, the G.50 prototype was demonstrated at

international aviation exhibition in Milan. Serial production of the fighter was launched at the SMAZA plant (Fiat branch) in 1938, in January

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the following year, the first 12 aircraft were sent to Spain for combat testing.

Soon the company received another order for the construction of 200 aircraft. In November 1939, G.50 fighters entered the 51st Stormo, and then the 52nd Stormo. In June 1940, the total number of combat-ready fighters was 118 copies. In November 1940, 48 machines from the 51st Stormo moved to Belgium to participate in the Battle of England, but they were used mainly for observation flights. At the end of January 1941, most units of the Italian expeditionary force returned to Italy, although the 352nd and 353rd squadrons remained in Belgium until mid-April, flying patrols between Dunkirk and Calais. Inferior to British fighters in speed and armament, the G.50 was used in the Mediterranean until July 1943.

In September 1940, tests began on a new version of the G.50bis with improved cockpit armor and increased fuel capacity, this version was intended to equip five groups in North Africa. The first G.50bis arrived in Libya at the end of December 1940 as part of the 358th Squadron, which later became part of the 2nd Group. The maximum number of G.50bis in Libya reached 80 machines in October 1941, by the end of the year their number was reduced to 35 machines. Soon, almost all of the remaining G.50bis were transferred to the air defense units of Sardinia (24th group), Greece (151st group) and the islands of the Zgeya Sea (154th group). |

The last variant was the G.50bis/A two-seat fighter-bomber, which first flew in October 1942. This carrier-based variant was intended for the builder of the Aquila aircraft carrier, but with the capitulation of Italy, the G.50bis/A program was curtailed. . The total production eventually amounted to 245 G.50s, 421 G.50bis and 108 C.50B two-seat trainers. G.50s were supplied in small numbers to the air forces of Croatia and Finland.

Characteristics of G.50: crew - 1 person, power plant - HOBKa - | Fiat A74 RC38 engine with 840 hp With. (626 kW), wingspan - 11.0 m, its area - 18.25 m², aircraft length - 7.8 m, height - 3.28 m, empty weight - 1965 kg, take-off weight - 2400 kg, maximum speed —

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473 km/h At an altitude of 4000 m, range - 580 km, service ceiling - 10,500 m, time to climb 4000 m - 4.6 min, armament - two 12.7-mm Vgeda-5ARAT machine guns.

5.55

Single-seat fighter G.55 "Centauro" ("Centaur") with the engine "Pa" KA1050 KS58 with a capacity of 1475 liters. c., developed under the direction of G. Gabrielli, was a further development of the fighter (G.50). The first of the three prototypes took off on April 30, 1942, the third prototype was armed with one cannon and four machine guns Although testing had just begun, a decision had already been made to start mass production on G.55. After this, the production of the fighter came under the control of the Germans, by the end of the war only 274 copies had been built, the construction of another 37 aircraft was stopped at the initial stage of assembly.

Until September 1943, fighters (G.55) managed to take part in the defense of Rome as part of the 353rd Squadron. , they suffered heavy losses as a result of the Allied bombing of airfields. In the spring of 1944, Fiat began to test two

prototype of the G.56 fighter, which was a modification of the G.55 aircraft with a more powerful OB 603A engine. The first G.56 prototype survived the war and was subsequently used by the firm as a test bench.

Characteristics S.55 / ý: crew - | person, power YC-setting - 1 Fiat KA1050 KS58 engine (licensed OV 605A) with a capacity of 1475 liters. With. (1100 kW), wing span - 11.85 m, its area - 21.11 m: aircraft length - 9.37 m, height - 3.13 m, empty weight - 2630 kg, takeoff weight - 3718 kg, maximum speed — 630 km/h, range — 1,200 km, time to climb 6,000 m — 7.2 min, service ceiling — 12,700 m, armament — three MG 151 cannons, two 12.7 mm machine guns "Vteda- 5ARAT" and two 80-kg bombs under the wing.

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Ar 234

Ar 240

B-534

Ba 349A

Bf 109G-1 of JG 94, Soviet-German front, winter 1942/43

Bf 109G-6, Germany, May 1945

Bf 109G-10 of JG 77, 1945

Bf 109G-14AS, 1945

Bf 109G-14U-2 from JG 11, 1945

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Bf 110 from Erg.ZGr., Poland, 1942

Bf 110, night scheme variant

Bf 110, night paint scheme

Wu 138

Wu 222V12

Do 24, Mediterranean, 1943

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Do 217E-2

Do 217N-2

Do 335V13

Fi 156

ET 265

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EI 282

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Fw 189

Fw 190A-3 of JG 54

Fw 190A-5, night paint scheme

Fw 190ÿ-8

Fw 200

H IXY2

He 219A

He 100D-1

He 111 of KG 53, winter paint scheme

He 112B of JG 132, September 1938

He 162

Not 177A-3

He 280

Hs 126

Hs 129B us Sch. S 2, Libya, November 1942

hs 132

toy

Ju 87, late modification

Ju 87

Ju 88A-4 u3 KG 30

Ju 88G-7a from NJSt. Norwegen, Norway, March 1945

Ju 288V5

Me 163 from E.Kdo 16, 1943

Me 163V1

Me 262A-1a Major Heinz Bahr (16 air victories in a jet fighter)

Me 262A-1a

Me 328A

Me 410

Me P.1101

R-51, trophy

Spitfire trophy

Ta 152H-1

Ta 154

I-153, captured

Mistel Ju 88H-4 + Fw 190ÿ-8

Mistel Ta 154 + Fw 190ÿ-8

BR20

Ba.65

CR25

Cant 7.501

Cant Z.1007

HANDS

Cant Z.1007bis

Caproni-Campini NI (CC.2)

G.55 from Montefusco Squadron

G.55

MC94

M.S.202, coloring option

M.S.202

P32

PI

P.108B

Ke.2000

Ke.2001

Re.2007

5.M.82

5.M.79 (transport)

5.M.79, coloring option

SM79

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Ba.88, Africa, 1940

Bf 109G-2, Finnish Air Force

Bf 109G-6, BBC Bulgaria, 1944

Bf 109G-6, BBC Romania

vBf 109G-6, Finnish Air Force

Bf 109G-10AS, POA aviation

Bf109G-6, Slovak fighter squadron, Crimea, spring 1943

Bf109G-10U4, Croatian Fighter Squadron, November 1944

Blenheim MET, Finnish Air Force

D-XXI, BBC Finland

(5.50, BBC Finland

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Not 112B, Romanian Air Force 52 Squadron, 1941

He 112B, Hungarian Air Force, 1939

GAK -81

JRS 798

Ju 88A-4, BBC Finland

MS406, BBC Finland, September 1943

PZL P-11

PZL P-23

PZL P-24

PZL P-37B

B-239 (F2A), BBC Finland

Aichi E16A1

Aichi M6bA1

Aichi OZA

Aichi E13A1

Yokosuka DAY

Yokosuka MXY7 model 11

Kawanishi E15K1

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Kawanishi E13K1

Kawanishi H6K5

Kawanishi H8K3

Kawanishi N1K2-J, 343rd sentai

Sii

Kawanishi E7K2

Kawasaki Ki-61, 18th sentai, 1945

Kawasaki Ki-61. 55th sentai. 1944

Kawasaki Ki-61, 244th sentai, 1945

Ki-15-1, 18th separate squadron, Hankow (China), 1939

Kyushu J7W 1

Kyushu K10W 1

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Kyushu K11W

Kyushu Q1W

Mitsubishi A5MA, kokutai China

Mitsubishi AbMZ, 1943

Mitsubishi A6M5

Mitsubishi AbM5s, 1945

Mitsubishi J2M3, 302nd kokutai

Mitsubishi)8M

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Mitsubishi Ki-21

Mitsubishi Ki-46, Java, 1943-1944

Nakajima SBM1

Nakajima JOY 1

Nakajima E8N2

Nakajima Ki-27, 246th sentai, 1942

Nakajima Ku-43, 64th sentai, 1944

Nakajima Ki-43, 65th sentai

Nakajima Ki-44, livery variant

Nakajima Ki-44

Nakajima Ki-84, 22nd sentai

Nakajima Ki-115, 1945

Owl 120 (DC-3)

B.5.14

The float bomber and reconnaissance K.5.14 was created under the leadership of Rosatelli and Stiavelli in CMA5A, a branch of Fiat. Flight tests of the prototype RS14A began in 1938. In 1940, serial production of the reconnaissance bomber version of the RS14B was launched.

A year later, RS14Bs were already in service with reconnaissance squadrons based in Sardinia. Soon, aircraft of the K.5.14C version (sea reconnaissance and rescue aircraft) began to leave the assembly lines. A prototype version of the A.5.14 (shore-based attack aircraft) was also built, which had a retractable landing gear and powerful armament - one 45 mm cannon, seven 12.7 mm machine guns and two 7.7 mm machine guns.

Later RS14 aircraft were used in the Mediterranean as reconnaissance, bombers (day and night), anti-submarine and rescue aircraft, as well as heavy fighters to cover convoys. After the capitulation of Italy in 1943, a large number of RS14s operated on the side of the Allies. The total number of built K.5.14 was 150 copies.

Characteristics of the RS14B: crew - 5 people, power plant - 2 Fiat A74 RC38 engines with a capacity of 900 hp each. With. (671 kW), wing span - 19.54 m and its area - 50.0 m², aircraft length - 13.68 m, empty weight - 5500 kg, takeoff weight - 8500 kg, maximum speed - 408 km / h per altitude 4,000 m, cruising speed — 330 km/h, range — 2,500 km, service ceiling — 5,000 m, armament — one 12.7 mm Scotti machine gun, two 7.7 mm Breda SAFAT machine guns "and up to 400 kg of bombs.

Trophy aircraft

RUTH

The RUT aircraft, developed in 1934 by the Yugoslav firm Rogozarski, was used in large quantities by JIET schools of the Yugoslav Air Force, all fighter pilots underwent initial training on this type of aircraft

9 M. and V. Kozyrevs 257

comrade It was produced in two versions - the RUT training aircraft and the RUT-N floating sea communication aircraft. Several vehicles were captured by the Italians, who used them to fight the partisans in 1941-1943.

"- Characteristics of PVT: crew - 2 people, power plant - 1 Gnome-Rhône engine 7K with 420 hp With. (313 kW), wingspan - 11.2 m and area - 22.1 m², aircraft length - 8.54 m, height - 2.81 m, empty weight - 967 kg, take-off weight - 1312 kg, maximum speed - 239 km / h at the ground, rate of climb - 455 m / min, practical ceiling = 7000 m.

"Zmaj Fizir"

Several Zmaj Fizir biplanes built by Rogozarski were captured by the Italians and used to fight the partisans.

Characteristics of "21 tazh E171g": crew - 2 people, power plant - 1 240 hp Walter Castor engine With. (179 kW), wingspan - 10.55 m and their area - 27.0 m², aircraft length - 7.55 m, height - 3.05 m, takeoff weight - 1460 kg, maximum speed - 215 km / h, time to climb 5000 m - 34.0 min, practical ceiling - 6000 m.

SIM-XIV-H

In the summer of 1941, several SIM-XIV-H seaplanes built by Rogozarski fell into the hands of the Italians. Trooper aircraft, after partial replacement of equipment, were used by the Italians as training and liaison aircraft until June 1943.

Characteristics of SIM-XIV-H series 1: crew - 3-6 people, power plant - 2 As 10E engines with a capacity of 270 hp each. With. (201 kW), wingspan - 15.2 m and their area - 37.6 m², aircraft length - 11.19 m, height - 4.48 m, empty weight - 2230 kg, take-off weight - 3350 kg, maximum speed - 243 km/h ground, cruising speed - 190 km/h, range - 840 km, time to climb 1000 m - 4.5 min, service ceiling - 4340 m, armament - two 7.5- mm machine gun and 200 kg of bombs or min.

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Ba.88

CR42

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Caproni-Campini NI (CC.2)

MC202

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R.108

Re 2007

SM79 transport

SM79 combat

3. JAPAN

In July 1909, a temporary military committee for aeronautics was formed in Japan, which included representatives of the army and navy, as well as employees of the University of Tokyo. The following year, the committee purchased an aircraft, the first flight of which took place in December of the same year. In 1912, the navy decided to withdraw from the committee and form its own organization, the Kaigun kokajutsu kenkyu kai (Naval Aeronautical Research Association). This event was the cause of many years of discord between the army and navy. The Association sent six naval officers to France and the United States with the task of acquiring seaplanes, learning how to fly them, and maintaining them.

In the First World War, Japan participated on the side of the Entente. In December 1915, the first aircraft purchased abroad appeared in the air battalion of the army, but a year later the Japanese began to develop their own aircraft industry, inviting the necessary specialists from Europe and the USA on favorable terms and at the same time purchasing dozens of licenses for the production of modern models of aviation equipment.

During the war, a naval aerodrome was built on the coast at Oppama near Yokosuka, and the Japanese Navy began building the first ship, the carrier of hydroplanes, the Wakamiyama Maru. In 1916, the first air corps, the Yokosuka kokutai, began to operate in the fleet, and a year later, the first aircraft completely developed by the Japanese was built in the naval arsenal in Yokosuka. After

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At the end of the First World War, the fleet began to work on the problem of launching aircraft from ships. In June 1920, a flight deck was mounted on the ship Wakamiyama Maru, from which the Sopwith aircraft successfully took off, and at the end of 1921, construction began on the world's first aircraft carrier, Hosokawa.

In 1931-1932. The Japanese seized Manchuria and turned it into the puppet state of Manchukuo, where a springboard began to be created to prepare for further advance into Northern China and the seizure of Soviet territories in Primorye and Northern Sakhalin. In July 1937, Japanese troops were sent to Northern China; they also included aviation, which had undergone significant modernization over the previous five years. The army immediately focused its aircraft on supporting ground operations, while the fleet aviation fought for air superiority and provided long-range bombing operations. Army aviation was involved during the Japanese attacks on the CCCP near Lake Khasan (70 aircraft) in July-August 1938 and on Mongolia near the Khalkhin-Gol River (more than 300 aircraft) in July-August 1939, which allowed it to assess the technical level and combat readiness of its aircraft, as well as to check tactical developments. On the eve of the attack on Pearl Harbor in December 1941, army aviation had about 4,300 aircraft, and about 3,000 were in service with naval aviation.

aircraft.

By this time, the hikosentai, or simply sentai, had become the basic unit of army aviation and was equivalent to a group or regiment, usually consisting of three or more chutais (squadrons) and one sentai hombu (staff). Usually, the sentai had from 27 to 49 aircraft. Chutai, in turn, consisted of 3 or 4 sotai (links), each of which had 3 aircraft. From 3 to 5 sentai united in hikodan (wing or brigade) under the command of a colonel or major general. A hikoshidan (division) consisted of two to four hikodans plus other units, such as training sentai or individual units directly under the command of the hikoshidan. Two or three hikoshidans made up the air army (kokugun). To the name of each formation

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the name of the type of aircraft included in it was added: sentoki (fighters), keibaku (light bombers), zubaku (heavy bombers), teisatsu (reconnaissance aircraft), pensuki (training aircraft).

In addition, there were also separate units that operated independently of regular aviation units. These units were the Dokoritsu Hikotai (Independent Battle Group or Regiment) and the Dokoritsu Chutai (Independent Squadron). They were usually attached directly to the air division or air army, in rare cases they were subordinated to smaller units if necessary.

The training units consisted of several training chutai and at least one staff (instructor) sentai. The task of these units, in addition to training young pilots, was to protect the sky over the Japanese islands.

Naval aviation was subdivided into carrier-based aviation and shore-based aviation. The highest operational formations of Japanese naval aviation were: kantai (fleet), koku kantai (air fleet) and homen kantai (regional fleet). The main tactical unit of carrier-based aviation was the sentai (from 36 to 64 aircraft), usually combining the aircraft of two aircraft carriers. A koku kantai included several sentai. Subsequently, instead of sentai, the kokutai (corps) became the main tactical unit.

Like army aviation, the name of the type of aircraft included in it was sometimes added to the name of the tactical unit of naval aviation: sentoki - fighters, kyūkoku - dive bombers, raigekiki - torpedo bombers, zubaku - bombers, enkiyoki - long-range bombers, teisatsu - scouts, furato sentoki - float fighters, hiko - flying boats. In the names of tactical units designed to perform specific tasks, either the place of their destination or the place of their base was often used.

Since 1932, all army aircraft received the designation "Ki" (short for the word "china" - construction) and a serial number - for example, Ki-61. Aircraft models were designated by Roman numerals, aircraft of the same model,

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in addition, they differed depending on the OT modifications with an additional hieroglyph (later they were replaced by Latin letters): "Kan" (a) - changes in the design of the airframe, "Ko" (O) - change in the power plant, "Otsu" (c) - change in the equipment or in the purpose of the aircraft, 9 (4) - change in armament.

In addition to the short designation, HyMepacation was also used according to the years the model was put into service, which included a brief description of the purpose of the aircraft. The numbering was carried out according to the Japanese system of chronology, only the last digits of the year were indicated in the designation of the aircraft. Thus, an aircraft put into service in 1939 (or in 2599 according to the Japanese calendar) received the designation type 99, put into service in 1940 (or in 2600) - type 100, and put into service

armament in 1942 (or in 2602) - type 2, etc. e. As a result, the long designation looked, for example, like this:

Ki-61-Ta - army fighter type 3 model 11 (type 3 according to the year 2603),

Ku-61-Ib - Army type 3 fighter model 1B.

In addition to the short and long designation systems, starting from the entry of Japan into World War II, aircraft also received short names. The names were used to confuse the Allied intelligence services, as well as in radio communications, for example, in a combat situation.

By the beginning of the war, two designation systems were used in the fleet - the long designation of the aircraft and KOPOTKOE. The last two digits of the current year according to the Japanese calendar were used in the long designation. For 1940 (2600), the designation type 0 was obtained (recall, in the army - type 100). To designate modifications of one type of aircraft, a two-digit number was used in the long designation. The first digit meant the aircraft modification number, and the second number of the engine modification. So, model 11 meant the first serial modification, model 21 - the second serial modification with the original engine, and model 22 - the second modification with the HOBbIM type of engine. Additional improvements within one modification were designated by a hieroglyph ("Ko", "Otsu" or "Hei") or a letter of the Latin alphabet (a, b, c).

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The short designation was an alphanumeric combination. The first letter indicated the purpose of the aircraft:

A - deck fighter,

B - torpedo bomber,

C - carrier-based reconnaissance aircraft, D - carrier-based dive bomber, E - reconnaissance seaplane,

E - patrol seaplane,

G - coastal bomber,

N - flying boat,

J - coastal fighter,

K - training aircraft,

I, - transport aircraft,

M - "special" aircraft,

MX - aircraft for special missions, M - float fighter,

R - bomber,

Oh - patrol plane,

K - coastal scout,

5 - night fighter.

This was followed by a number indicating the procedure for adopting this type into service; it was assigned at the start of serial production of the aircraft. Then came the letter denoting the company that developed the aircraft:

A - "Aichi", as well as "North American", B - "Boeing",

C - "Consolidated",

D - "Douglas",

C - "Hitachi"

H - "Hiro", as well as "Hawker",

Not - "Heinkel", |

J - Nippon Kagata, as well as Junkers, K - Kawanishi, as well as Kinnear,

M - "Mitsubishi",

M - "Nakajima",

R - "Nihon",

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5 - "Sasebo",

Si - "Owl",

V - "Vout",

W - Watanabe, later Kyushu, Y - Yokosuka,

7. - "Mizuno".

At the end of the alphanumeric combination was the aircraft model number. Minor modifications made to the machine were indicated by a Latin letter. In addition, if during the operation of the aircraft its purpose changed, then a letter corresponding to the new use of the aircraft was assigned through a hyphen. So, the training version of the aircraft received, for example, the designation BSN2-K. Later during the war, in order to preserve the secrecy of the purpose of the aircraft, the fleet also began to use its own names for additional designation.

aircraft.

The allies, having a poor understanding of the Japanese aircraft designation system, from the second half of 1942 began to give Japanese aircraft their own names. At first, all fighter planes were called "Zero", and all bombers were called "Mitsubishi". However, since the summer of 1944, the Allied Air Center introduced the following principle for naming Japanese aircraft: fighters of all types received male names, bombers, reconnaissance and transport aircraft - female (the name of transport aircraft began with the letter T), training machines - the names of trees, and gliders - BIRDS.

The Pacific War began on December 7, 1941, when early in the morning the first wave of Japanese aircraft, launched from aircraft carriers, reached Pearl Harbor, the US naval base. The American operators of the radar station, located on the island of Opana, timely detected the approach of aircraft. However, the junior radar officer did not immediately transmit information about the appearance of the target, believing that these were American B-17 bombers, which were expected to arrive from the US West Coast. Some time later, the attack began.

aircraft of the second wave. As a result, the airfields on the Wheeler, Kaneohe, and Ford Islands were put out of action.

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Island, Hickam, Bellows and Eva. The battleships Arizona, Oklahoma, West Virginia, Pennsylvania, Tennessee, Maryland, Nevada and California were damaged in the attack. Of the warships, only Lexington, Saratoga and Enterprise remained undamaged, which managed to leave the port at the start of the attack. The Americans lost 2,403 killed and 1,178 wounded during the Japanese attack on Pearl Harbor. Japanese casualties were 27 aircraft.

It must be said that the preparation of flight crews for the attack on Pearl Harbor was carried out in an extremely tough regime. Japanese dive bombers were designed to drop bombs at an altitude of 800 m, which made it possible to have sufficient time to recover from a dive. In order to improve the accuracy of bombing, the command decided to reduce this height by half. Dropping bombs from a height of 400 m meant that the aircraft, when exiting a dive, should be at an altitude of about 15-20 m above the ground. If the pilot lost consciousness for a moment at high g-forces that occurred at the exit from a dive, then under these conditions he was already in mortal danger. At least eight Japanese pilots died during training, but the effect of such extreme bombing was amazing for the time - the accuracy increased from 20 to 8696.

The attack on Pearl Harbor came as a complete surprise to the Americans, since they were quite sure until the last moment that the Japanese target would be the territory of the Soviet Union, and the direction of the strike would be through China and Mongolia. The Americans also made a big mistake in assessing the Japanese military potential. Moreover, they themselves contributed to the development of the economic and military power of Japan, generously supplying it with the most advanced models of military equipment, including prototypes of aircraft.

After their victory at Pearl Harbor, the Japanese attacked numerous islands in the Pacific with impunity. Already on the second day after the start of the war, Japanese troops invaded Thailand, using the former French bases in Indochina. Through Malaysia, Japanese troops moved to Singapore, and on January 15 it was captured. In February 1942, the islands in Indochina were captured, Burma fell in April, and Key

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the tai was cut off from land supplies. By the summer of 1942, it became obvious that Australia would be the target of the next Japanese offensive.

It became clear to both belligerents that aircraft and aircraft carriers would be the main forces in the Pacific War. If at the end of 1941 Japanese aircraft carriers carried out air strikes only against American bases, then in 1942 battles began between the aircraft carriers themselves, and the losses on both sides were high. At the beginning of 1942, the ratio of combat-ready aircraft carriers was 2.5:1 in favor of Japan; in August of the same year, the Japanese already had an advantage in the ratio of 4:1. However, by the end of the year, a turning point occurred in the aircraft carrier war, because Essex-class strike aircraft carriers began to enter service with the American fleet (the total number of these aircraft carriers was 24 instances). The British, on the other hand, adopted the Ark Royal class aircraft carriers, which had armored hangars and flight decks. The United States also launched the conversion of nine Cleveland-class cruisers into Independence-class escort aircraft carriers; from the beginning of 1943, they became an integral part of aircraft carrier groups. Japan began in 1942-1943. the construction of six Unryu-class attack aircraft carriers, although only two of the six ships were built.

During 1942-1943. Allied forces were getting closer and closer to Japan. The course of the war began to cause concern among the Japanese command, among which the question of the need to use ramming tactics in combat operations began to be discussed.

Major General H. Masaki, who headed the 3rd Army Aviation Technical Laboratory, was instructed to study possible tactics for attacking enemy ships. The result of the study was the conclusion that in order to achieve the greatest efficiency, it is necessary to purposefully ram enemy ships with bomb-carrying aircraft. At the same time, it was said that Japan has a fairly large number of young people who are ready to give their lives for the emperor. In mid-July, H. Masaki's team prepared a secret report "Studying Anti-Ship Attacks Using Suicidal Tactics." The report, for example, provided evidence that in order to create a hole in the board, capable of

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to disable an enemy battleship or aircraft carrier, a bomb weighing about 1000 kg is needed, while a bomb weighing about 2000 kg is capable of sinking a ship of any class.

Vice Admiral G. Onishi and Admiral I. Yamamoto, in a closed meeting, formulated a plan according to which Japanese pilots MUST perform suicide rams when attacking American ships. At the same time, Onishi's arguments looked like this: "There are only two types of aviators in the world - winners and losers. And while Japan suffers from a severe shortage of trained pilots, there is a remedy for it. If the pilot finds himself in front of an enemy ship or aircraft, having exhausted all his resources, then he still has the aircraft as an excellent weapon. And what could be more magnificent for a warrior than to give his life for the emperor and the country?"

It should be said that the concept of planned suicide attacks had opponents in the Japanese General Staff, who believed that this step would be useless and lead to huge losses of people. Despite this opposition, Onishi insisted on accepting his plan, and as a result, at the highest level, albeit reluctantly, a decision was made to form special aviation units, which were headed by Generals Y. Shiroku and M. Sugawara. The motto of these units was: "One plane - one ship." Instructions were soon prepared for combat squadrons, which outlined the methodology for conducting suicide attacks, and preparations began for the conversion of production aircraft into kamikaze aircraft, and in parallel with this, the development of manned projectile aircraft launched from HO - seatel.

By October 20, 1944, the first "special assault detachment" was formed, consisting of 24 suicide pilots. This detachment, commanded by Lieutenant Yu. Seki, was called "Kamikaze" ("Divine Wind"). Tak was the name in Japan of typhoons, which in 1274 and 1281, according to legend, scattered the fleet of the Mongol Khan Kublai Khan, who was preparing to land on the territory of Japan. The Kamikaze detachment consisted of four squadrons of six aircraft each, the names of the squadrons were as follows - "Shiki

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Shima (Japan), Yamato (Japanese Spirit), Asahi (Rising Sun) and Yamasakura (Mountain Cherry).

In the period from 23 to 26 October, Japanese squadrons attacked near about. Leite a formation of allied ships consisting of 7 aircraft carriers and 40 escort ships. There were already 55 suicide pilots among the Japanese pilots, this operation was the first in world history to use the tactics of mass suicide attacks. During the TOT period, the Japanese sank five Allied ships and damaged 35 ships (of which 23 ships were heavily damaged). This was the first successful use of kamikaze, so the attack technique remained the same for other kamikaze until the end of the war. As a rule, allied warships, primarily aircraft carriers and transports, became the targets of attacks by suicide pilots.

The increasing frequency of allied bomber raids on Japan forced the Japanese to begin practicing the air ramming method. By December 5, 1944, as part of the 10th Air Division, already

formed five suicide squadrons, whose task was to intercept B-29 bombers. By the end of 1944, the pilots of the 10th Air Division had shot down 28 B-29 self-propelled guns, of which 16 were destroyed by ramming.

On March 16, 1945, the Allies captured the island of Iwo Jima, ending a long air campaign. In response to this, on March 21, the Japanese for the first time used manned aircraft "Oka" projectiles in combat. However, the formation of 15 Japanese C4M bombers carrying projectiles and escort aircraft was destroyed by American aircraft and naval anti-aircraft guns. Returning from a combat mission, American pilots reported that the downed Japanese bombers were carrying winged shells of an unknown type. The next use of the Oka took place on April 12, and this time the G4M bombers, taking into account the experience of the previous unsuccessful attack, broke through to the target one by one and from different directions. One of the launched projectiles hit the gun mount of the battleship West Virginia, the destroyer Mannert Abil was sunk, and the cruiser Stanley and minesweeper Jeffers were also damaged. May 4 after the Oka attacks

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the mine layer "Shi" and the minesweeper "Gatey" were damaged; on May 11, the destroyer "Hugh Hdzli" was damaged.

From the very beginning of the defense of Okinawa, the use of suicide attacks was considered by the Japanese command as an integral element: the defense of the island. From March 25 to June 21, 1945, 1900 such attacks were recorded, during which 250 ships were damaged, 34 of which sank. Suicide attacks peaked on 7 April JIA, with 355 Japanese aircraft participating in these attacks.

In the summer of 1945, the Anglo-American command adopted the plan for Operation Downfall. According to this plan, the invasion of the Japanese islands was to be carried out in two stages. The first stage, the landing of allied forces on about. Kyushu, had the name "Olympic" ("Olympic"), its start was scheduled for | | November 1945, i.e. after the end of the typhoon season. The second stage, called "Coronet" ("Diadema"), provided for the landing of troops | March 1946 to the main territory of Japan - about. Honshu. However, the Americans, contrary to the planned plan, on August 6 dropped the first atomic bomb on Hiroshima. And already on August 9, an American B-29 bomber took off from the island of Tinian to drop a second atomic bomb, code-named "Fat Man" ("Fat Man") on the city of Kokuru. But the city at that time was blocked from the bomber by a layer of clouds, so the target was changed to Nagasaki, a port city in the south of Kyushu, which was added to the list of targets at the very last moment. At 11.02 the city was destroyed.

After Japan's refusal to comply with the demands of the allies for unconditional surrender, the Soviet Union, in accordance with the decisions of the Yalta and Potsdam conferences, declared war on Japan on August 8. In the period from August 9 to September 2, Soviet troops defeated the Kwantung Army and the Kuril-Sakhalin grouping of Japanese troops, freeing Northeast China, North Korea, South Sakhalin and the Kuril Islands from the Japanese. The clear superiority of the Allies convinced the Japanese government of the need to capitulate. In a radio address to the nation on August 15, the emperor acknowledged that continuing the struggle would lead to the complete annihilation of the Japanese people. On September 2, Japan capitulated.

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The main aviation companies of Japan participated in the aircraft programs of the pre-war time and during the war: Aichi, Yokosuka, Kawanishi, Kawasaki, Kayaba, Kokusai, Kyushu, Manshu, Mitsubishi, Nakajima, Rikugun, Tachikawa and Hitachi.

"Aichi"

, Aichi tokei denki kabushiki kaisha (Aichi Watch and Electric Company) was Japan's fourth largest aircraft manufacturer during World War II. "Aichi" began its activity in 1920 with the production of aircraft, and in 1927 the company began to start engines.

B7A

The carrier-based torpedo bomber B7A "Ryusei" ("Shooting Star") was developed by May 1942, the prototype of the machine first took off in December. Aircraft equipped with a Homare-11 engine with a power of 1800 hp. c., received the designation V7A1 (carrier-based bomber zk-experimental), 9 experimental machines were tested. In April 1944, an improved version of the B7A2 (carrier-based torpedo bomber) appeared with a more powerful HbIM Homare-12 engine: Production of the B7A, deployed at Aichi and at the XXII Naval Aviation Arsenal, was stopped in May 1945 after a strong earthquake. By the end of the war, almost all Japanese aircraft carriers were lost, so a small number of the remaining aircraft operated from coastal bases. Before during the war, 114 copies of the B7A aircraft were built, which received the code designation "Grace" from the Allies.

Characteristics B7A2: crew - 2 people, power plant - 1 engine "Homare" -12 with a capacity of 1825 liters. With. (1361 kW), wing span - 14.4 m and its area - 35.0 m², aircraft length - 11.5 m, height - 4.075 m, empty weight - 3810 kg, take-off weight - 5625 kg, maximum speed - 565 km / h at an altitude of 6500 m, range - 3300 km, time for

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boron at a height of 4000 m - 6.9 min, practical ceiling - 2500 m, armament - two 20-mm cannons type 99, one 13.2-mm machine gun type 2, up to 800 kg of bombs or one 800-kg torpedo.

D1A

In 1933, the company began developing an experimental model of a carrier-based dive bomber and reconnaissance aircraft based on the German He 50 aircraft. The biplane aircraft received a reinforced landing gear for use from aircraft carriers and a Kotobuki-2 Kai engine with a power of 560 hp. s., he was given the name "special bomber". During the tests, the Aichi aircraft proved to be more stable in flight and more maneuverable compared to the experimental machines of the Nakajima and Yokosuka firms, therefore, at the end of 1934, Aichi received a contract for the serial production of the D1A aircraft (deck bomber type 94 model 11).

Unlike the prototype aircraft, serial D1A had wings swept along the leading edge, a modified rudder, and the tail spike was replaced by a non-steered wheel. The armament of the aircraft consisted of 3 machine guns of 7.7 mm caliber (two for firing forward and one for firing backwards), two 30-kg bombs under the wings and one 250-kg bomb under the fuselage. In the autumn of 1936, a prototype of an improved version of the D1A2 (type 94 model 22 carrier-based bomber) was ready, which received a more powerful Hikari-1 engine.

D1A aircraft of both modifications were widely used during the Sino-Japanese War, but by the time the Pacific War began, only 69 aircraft remained in service. Heavy losses and the arrival of new aviation equipment led to the rapid withdrawal of D1A aircraft from service. A total of 162 D1A machines were built in 1934-1937. and 428 D1A2 machines in 1936-1940. The D1A was codenamed "Susie" by the Allies.

Characteristics of D1A2: crew - 2 people, power plant - 1 Hikari engine-1 with a capacity of 730 liters. With. (544 kW), wing span - 11.4 m and its area - 34.7 m², aircraft length - 9.3 m, height - 3.41 m, empty weight - 1516 kg,

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maximum take-off weight - 2610 kg, maximum CKO - height - 310 km / h at an altitude of 3200 m, range - 930 km, climb time 3000 m - 7.8 min, service ceiling - 6800 m, armament - three 7.7- mm machine gun type 97, one 250-kg bomb under the fuselage and two 30-kg bombs under the wing.

D3A

Obsolete by the beginning of the war, the D3A carrier-based dive bomber was the first Japanese aircraft to drop bombs on American targets on December 7, 1941 during the attack on Pearl Harbor. 129 dive-bombers started in two waves and achieved complete success.

The dive bomber was developed in 1936--1937, the first flight of a prototype equipped with a Hikari engine - | power 710l. s., took place in January 1938. Tests showed that the power of the power plant was insufficient, in addition, the aircraft was unstable at high speeds, therefore the second experimental aircraft was seriously reworked. They changed the profile and increased the wingspan, increased the takeoff weight of the aircraft, and also strengthened the brake flaps. The Hikari-1 engine was replaced by the Mitsubishi Kinsei-3 engine with a capacity of 840 hp. With. |

According to the results of comparative tests of OZA and OZM ("Nakajima") aircraft, which were won by the Aichi aircraft, in December 1939, serial production of the aircraft began under the designation OZA! (carrier bomber type 99 model 11). Production aircraft had a smaller wing span and were equipped with a more powerful Kinsei-43 engine.

In 1940, the D3A1 aircraft passed military tests on the Akagi and Kaga aircraft carriers, after which the aircraft entered service with naval aviation units stationed in China, where they supported army units. A large number of OZA] were transferred to MH-China, where they, taking part in all the major operations of aircraft carriers in the first ten months of the war, sank a large number of allied ships. Among the victims of the OZA! attacks, which the Allies assigned the code designation "Val", were English ships - "Hermes" (the world's first aircraft carrier sunk by a carrier-based aircraft), as well as the cruisers "Cornwall" and "Dorsetshire".

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However, significant losses among ROSA! during a retreat in the Coral Sea in early May 1942, the Japanese were forced to transfer the surviving vehicles to coastal bases. In early August, OZA dive bombers! from the coastal units took part in the battle for Guadalcanal and suffered heavy losses. The reason for these losses was the fierce opposition of the Allied carrier-based fighters and the insufficient flight range of the dive bombers to cover 2000 km from Rabaul to the target and back.

Since August 1942, the crane has been supplied with D3A2 (type 99 model 22 carrier-based bomber) with increased fuel capacity and a Kinsey-54 engine with a power of 1300 hp. s., but by 1944 American fighters were already far superior in speed. A small number of serial aircraft were subsequently used for attacks by suicide pilots. For these purposes, the training version of the aircraft (D3Y2-K) was converted into a specialized assault version, carrying two 20-mm Type 99 cannons and one 800-kg bomb, the main design difference of this version was the landing gear dropped after takeoff. It was planned to produce 30 such machines every month, but there was no time left to implement these plans. The total number of aircraft produced was 476 OZA and 1016 D3A2s (some of which were converted into OZA2-K training bombers).

Characteristics of OZA!: crew - 2 people, power plant - | engine "Kinsey" -43 with a capacity of 1000 liters. With. (746 kW), wing span - 14.38 m and its area - 34.9 m ', aircraft length - 10.2 m, height - 3.85 m, empty weight - 2570 kg, takeoff weight - 3800 kg, maximum speed - 430 km / h at an altitude of 6200 m, range - 1352 km, time to climb 3000 m - 5.76 min,

service ceiling - 10,500 m, armament - two 7.7-mm machine guns type 97, one 7.7-mm bullet mettip 92, one 250-kg bomb under the fuselage and two 60-kg bombs under the wing.

ETOA

The reconnaissance biplane E10A (reconnaissance seaplane marine type 96 model 11) was put into service in 1936. It was used at the beginning of the war as a short-range reconnaissance

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and liaison aircraft, received the code designation "Hank" from the Allies. A total of 15 aircraft were flown.

Characteristics of E10A: crew - 3 people, power plant - | Hiro engine with a capacity of 620 hp. With. (462 kW), wingspan - 15.5 m and their area - 52.1 m, aircraft length - 11.22 m, height - 4.5 m, empty weight - 2100 kg, takeoff weight - 3300 kg, maximum speed - 206 km/h, cruising speed - 106 km/h, range - 1862 km, time to climb 3000 m - 17.7 min, service ceiling - 4120 m, armament - one 7.7 mm machine gun type 92.

ET1A

In 1936, Aichi received an order to develop a night reconnaissance aircraft for use from catapults of cruisers and battleships. The first flight of a prototype biplane aircraft, designated E11A1 (night reconnaissance seaplane marine type 98 model 11), was made in June 1937. The total number of aircraft flown from 1937 to 1940 was 20 instances. The EPAT reconnaissance aircraft, code-named "Laura" by the Allies, was only used to a limited extent in the first year of the Pacific War.

Characteristics of E11A1: crew - 3 people, power yC-setting - | Hiro engine with a capacity of 620 hp. With. (462 kW), wingspan - 14.49 m and their area - 46.4 m², aircraft length ca - 10.71 m, height - 4.52 M, empty Bec - 1927 kg, take-off Bec - 3300 kg, maximum speed - 217 km / h At an altitude of 2400 m, cruising speed - 130 km / h, range - 1945 km, time to climb 3000 m - 18.6 min, service ceiling - 4425 m, armament - one 7.7- mm machine gun type 92.

ETZA

In 1937, the firm began the development of a three-seat reconnaissance seaplane E13A (the code name of the Allies is "AKe"). Prototype equipped with a Kinsei-43 engine with a power of 1060 hp. s., was completed at the end of 1938, after participating in competitive tests with the Kawanishi E13K aircraft in December 1940, it was put into series

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under the designation "night reconnaissance seaplane marine type 0 model 11". The first machines were delivered to Japanese cruisers, and the following year these seaplanes, which were hit by one 250-kg bomb, carried out several raids on the Hankou-Canton railway. In December 1941, E13A! carried out reconnaissance while escorted by the 8th cruiser detachment, which was going to attack Pearl Harbor. After the rate of production of aircraft increased, battleships began to be equipped with them, including the battleship "Haruna" of Vice Admiral Nagumo.

The result of a combat operation sometimes depended on the effectiveness of reconnaissance aircraft. So, for example, due to problems with the ship's catapults, there was a delay in the takeoff of one of the four E13A1 aircraft launched in search of American aircraft carriers at dawn on June 4, 1942, which deprived the Japanese of the necessary initiative at the very beginning of the Battle of Miduse. In addition to Toro, reconnaissance aircraft E! BEHIND! from the cruiser "Chikumas" was forced to return ahead of time due to an engine malfunction, significantly reducing the very

important search area. One of the other scouts, taking off from the cruiser Tohne, eventually located the American fleet, but failed to immediately report the presence of aircraft carriers, causing a further 30-minute delay in the preparation of aircraft awaiting take-off orders. from Japanese aircraft carriers. When the Americans launched the first wave of their attack aircraft, they found that the decks of the Japanese aircraft carriers Akagi, Kaga, Soryu and Hiryu were packed with aircraft that were just getting ready to take off to attack the American fleet. |

In total, it is estimated that more than 250 E13As were based aboard Japanese ships in mid-1943, although their use was reduced whenever American fighters appeared in the air. E13A aircraft were produced in various modifications, including those with a magnetic submarine detection system; the remaining aircraft were used at the end of the war for suicide attacks on allied ships. The total production of E13A aircraft during the war amounted to 1418 copies, of which 133 aircraft were built by Aichi, 48 aircraft by Dai Yuichi Kaigun Kokuso and 1237 aircraft by Kyushu.

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Characteristics of 〃〃〃〃: crew - 3 people, power plant - | engine "Kinsey" -43 with a capacity of 1000 liters. With. (746 kW), wingspan - 14.5 m and ero area - 36.0 m, aircraft length - 11.45 m, height - 4.7 m, empty Bec - 2642 kg, takeoff Bec - 3640 kg, maximum speed - 376 km / h at an altitude of 2180 m, cruising speed - 222 km / h, range - 2089 km, climb time 3000 m - 6.1 min, service ceiling - 8730 m, armament - one 7.7-mm machine gun and 250 kg of bombs.

E16A

In May 1942, a prototype seaplane E16A] Zuyun (Lucky Cloud) was built, which was intended for use as a reconnaissance or dive bomber. The aircraft, which received the designation "reconnaissance marine experimental seaplane", had an all-metal structure, with the exception of wooden wingtips and fabric trim on control surfaces. The Mitsubishi Kinsei-51 engine with a capacity of 1300 hp was used as a power plant. With. Production aircraft were equipped with air brakes and had folding consoles for easy storage of the aircraft on board. E16A1 scouts (reconnaissance seaplane marine type 3 model 11) entered service in August 1943, then aircraft with a Kinsey-54 engine with a power of 1300 hp began to arrive. with., the production of these aircraft was established by the Nippon Hikoki firm. A variant of the aircraft under the designation E16A2 with a Kinsei-62 engine with a capacity of 1560 hp. With. until the end of the war did not have time to complete flight tests. At the end of the war, the surviving E16A! used for suicide attacks during the Battle of Okinawa. The total number of produced E16A1 aircraft (code designation "Paul") was 256 copies.

Characteristics of E16A1: crew - 2 people, power plant - | engine "Kinsey" -54 with a capacity of 1300 liters. With. (969 kW), wing span - 12.8 m and its area - 28.0 m?, aircraft length - 10.83 m, height - 4.74 m, empty weight - 2713 kg, takeoff weight - 3800 kg , maximum speed - 448 km / h on

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altitude 5500 m, cruising speed - 352 km/h, range - 2535 km, time to climb 5000 m - 10.0 min, service ceiling - 10,290 m, armament - two 20-mm guns type 99, one 13- mm machine gun type 2 and 250 kg bombs.

NZA

The design of the PUA flying training boat began in January 1940. The aircraft, equipped with two engines, Nakajima Kotobuki-41 Kan 2, and a three-leg retractable landing gear for rolling out to land, was intended as a transition vehicle for training crews.

large reconnaissance boat "Kawanisi" NZK I. For the training of shooters and performing anti-submarine missions, the installation of 7.7-mm machine guns was provided, as well as the suspension of 250 kg of deep-seated OOMOs.

The first experimental aircraft took off in September of the same year, but the flight characteristics of the machine were unsatisfactory. After finalizing the aircraft, the company received an order for a serial batch of 24 aircraft, which were produced from 1942 to 1943 under the designation H9A] (sea training flying boat type 2 model 11). Four more aircraft were built by Nippon Hikoki. In addition to training crews, the flying boat was also used to patrol the territorial waters of Japan.

Characteristics of H9A! 1: crew - 5-8 people, power plant - 2 Kotobuki-42 engines with a capacity of 710 hp each. With. (529 kW), wing span - 24.0 m, its area - 63.3 m²; aircraft length - 16.95 m, height - 5.25 m, empty weight - 4900 kg, maximum takeoff weight - 7500 kg, maximum - speed - 315 km/h at an altitude of 3000 m, time to climb 3000 m - 11.25 min, service ceiling - 6780 m, armament - two 7.7-mm machine guns type 92 and 250 kg of bombs.

M6A

In May 1942, the development of a bomber designed to be based on a submarine began. The aircraft, which received the designation MBA "Seiran" ("Solar Hurricane"), was equipped with an Atsuta engine (licensed version

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TOM German engine DB 601). The launch of the bomber was envisaged from a catapult; if necessary, the floats of the aircraft could be dropped in the air to increase the flight speed. On a submarine, the aircraft had to be stored in a hangar with a diameter of 3.5 m.

In the spring of 1943, at the company's plant in Nagoya, the construction of an experimental batch of four M6A1 machines (special type 4 model 11 float bomber) and two training machines began M6A1-K "Nanzan" ("South Mountain") with a wheeled chassis. The first aircraft from the pilot batch took off in November 1943, and a year later the first production aircraft rolled off the assembly line. In early December 1944, when 8 serial aircraft had already been built, a strong earthquake damaged equipment and assembly lines at the plant. Nevertheless, the fleet began training flight crews for Mba!, who were to be in service with the 631st Kokutai, which was part of the 1st submarine flotilla. Aircraft production was almost restored, but on March 12, 1945, the plant was destroyed as a result of an American air raid. By the end of the war, only 20 planes out of the planned 44 aircraft had been flown.

Characteristics of MBA!: crew — 2 people, power plant — | engine "Atsuta" -21 with a capacity of 1400 liters. With. (1044 kW), wing span - 12.28 m and its area - 27.0 m²; aircraft length - 11.64 m, height: - 4.58 m, empty weight = 3300 kg, maximum takeoff Bec - 4445 kg, maximum speed — 475 km/h at an altitude of 5200 m, range — 1200 km, time to climb 3000 m — 5.8 min, practical ceiling — 9900 m, armament — one 13-mm machine gun type 2, one 850 -kg torpedo, or one 850-kg bomb, or two 250-kg bombs.

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SIA

At the end of 1943, the fleet issued a task to develop a night fighter equipped with a locator. In accordance with this task, the company developed the aircraft SIA "Denko" ("Lightning"), the structure of which was completely metal, except for the control surfaces covered with fabric, the pilot and operator-gunner were each placed in their own cockpit. The aircraft was equipped with two Homa engines.

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pe-22, carried powerful weapons - four forward-firing cannons (2 x 30-mm and 2 x 20-mm) in the forward fuselage, twin 20-mm cannons in the remote-controlled upper fuselage turret for firing back-up and a bomb load weighing 250 kg. By the end of the wars, two experimental 51ÿÿ aircraft (experimental naval night fighter) were under construction, but both of them were destroyed during a raid by American bombers (the degree of readiness of the first aircraft was 90%, the second aircraft was 70%).

Characteristics 51A1: crew - 2 people, power YC-training - 2 Homare-22 engines with a power of 2000 hp each. With. (1491 kW), wing span - 17.5 m and its area - 47.0 m², aircraft length - 15.1 m, height - 4.61 m, empty weight - 7320 kg, maximum takeoff weight - 11 510 kg, maximum speed - 512 km/h at an altitude of 8000 m, cruising speed - 386 km/h at an altitude of 4000 m, range - 2500 km, time to climb 9000 m - 14.75 min, service ceiling - 12000 m, armament - two 30 mm type 5 cannons, four 20 mm type 99 cannons and 250 kg of bombs.

Yokosuka

B4Y

In 1934, the I Naval Aviation Technical Arsenal in Yokosuka received an order from the Navy to develop a carrier-based biplane torpedo bomber VAH! with Hiro engine. The first prototype aircraft was flown at the end of 1935. Over the next year, four more experimental aircraft were produced, the second and third aircraft were equipped with a 640-hp Kotobuki-3 engine. s., and the fourth and fifth - "Hikari" -2 with a capacity of 840 liters. With.

According to the results of flight tests, the aircraft was accepted into the series under the designation CVC! (deck torpedo bomber type 96 model 11) with the Hikari-2 engine, production began in November 1936 at the plants of the Mitsubishi, Nakajima and P marine aviation technical arsenal. The aircraft was used by the Japanese Navy as a carrier-based torpedo bomber until 1940 and took part in combat operations in China. During the Pacific War, a few survivors
machines

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used as training aircraft. Bcero produced 205 B4Y1 aircraft (Allied code designation "Jeap").

CVC characteristics: crew — 3 people, power plant — | engine "Hikari" -2 with a capacity of 840 liters. With. (626 kW), wingspan - 15.0 and their area - 50.0 mg, aircraft length - 10.15 m, height - 4.36 m, empty weight - 2000 kg, takeoff weight - 3600 kg, maximum speed - 278 km / h, range - 1580 km, time to climb 3000 m - 14.0 min, service ceiling - 6000 m, armament - one 7.7-mm machine gun type 92, one 800-kg torpedo or up to 500 kg of bombs.

D4Y

A prototype of the D4Y1 Suisey (Comet) carrier-based bomber, equipped with a German OB 600G engine, first took off in December. 1941. For use as a dive bomber, the aircraft was equipped with three brake flaps, had three machine guns as weapons and could carry up to 560 kg of bomb load. According to the test results, the aircraft was put into service under the designation D4Y1-C (type 2 model 11 carrier-based reconnaissance aircraft). Small arms were retained, but the bomb racks were CHATbl, in addition, they supplied the Atsuta engine with a power of 1200 hp. With.

The D4Y1-C reconnaissance aircraft was ordered into series at the Aichi plant; in the late spring of 1942, the first production vehicle rolled off the assembly line. Part of the 04Y] aircraft was built in the version of a dive bomber, 174 aircraft were delivered to the 1st, 2nd and 3rd separate sentai, based on 9 aircraft carriers in the Philippine Sea. Aircraft, KOTOPbIM allies assigned or code

designation "Judy", first came into action in February 1944 in the area of Truk Island. However, they fought without much success and suffered heavy losses, as they were easily intercepted by American fighters.

In the spring of 1944, a new version of the D4Y2 appeared with an Atsuta-32 engine with a power of 1400 hp. pp., produced in MATH modifications. A large number of aircraft of this version were lost in the battle for the Philippines, therefore, to make up for losses, XI military was involved in the production of D4Y2

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naval arsenal in Hiro, which delivered 215 aircraft from April 1944 until the end of the war. A small number of aircraft produced by this arsenal were converted into D4Y2-S night fighters. With this modification, bombing equipment was removed, and a 20-mm cannon was installed in the rear of the fuselage for firing forward at an angle to the horizon. However, the low rate of climb of the machine has become the main reason for its low efficiency when performing interception tasks.

Reliability problems with the Atsuta-32 engine led to its replacement in the new version of the D4Y3 aircraft by the Kinsei-62 engine. The first D4Y3 aircraft was built in May 1944, and by September of the same year, only this version of the aircraft, manufactured by Aichi and | naval arsenal in two modifications D4Y3 and D4Y3a. From February 1945, production of a new version began - a single-seat aircraft for suicide pilots D4Y4 (special naval attack bomber model 43), which could carry an 800-kg bomb in a semi-submerged position. The total number of D4Y aircraft built was 2038 units.

Characteristics of D4Y3: crew - 2 people, power YC-setting - | engine "Kinsey" -62 with a capacity of 1560 liters. With. (1163 kW), wingspan - 11.5 m, its area - 22.8 m², length of the aircraft - 10.22 m, height - 3.75 m, Empty weight - 2501 kg, maximum takeoff weight - 4657 kg, maximum speed — 575 km/h at an altitude of 6050 m, range — 1520 km, time to climb 3000 m — 4.55 min, service ceiling — 10,500 m, armament — two 7.7 mm machine guns, one 13.1 -mm machine gun and two 560-kg bombs.

ET4U

The E14Y reconnaissance seaplane was intended for use from submarines. OH was supposed to fit in the en-rape on board the submarine with the wing and floats removed, easy to assemble in preparation for take-off and disassemble after the mission. The first prototype E14YI, equipped with a Hitachi Tempu-12 engine, was manufactured in 1939 in Yokosuka. The original machine is

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It had a relatively small keel, but according to the test results, the height of the keel was increased. The high keel was made collapsible to allow the aircraft to be stored in the hangar. In the series, the aircraft was produced under the designation "submarine reconnaissance seaplane type 0 model 11" (later it was called "small reconnaissance seaplane sea type 0 model 11").

For the first time, the E14U1 took part in the hostilities on 17 December 1941, when a plane took off from the submarine | -7 to assess the results of the Japanese attack on Pearl Harbor. Until 1943, E14-1s were actively used in reconnaissance missions in Australia, New Zealand, Africa, Madagascar and the Aleutian Islands. He became the only Japanese aircraft to drop bombs on America. Pilot Fujita, flying E14U1 from submarine 1-25, dropped 3a incendiary bombs on the Oregon coast. Two E14Y1 vehicles were used on German submarines based in Sumatra. A total of 125 E14-1 reconnaissance aircraft were issued (the code designation of the allies is "Ciep").

Characteristics of E14-1: crew - 2 people, power plant - | engine "Gempu" -12 with a capacity of 340 liters. With. (254 kW), wingspan - 11.0 m and wing area - 19.0 m², aircraft length - 8.54 m, height - 3.9 m, empty weight - 1072 kg, maximum takeoff weight - 1450 kg, maximum speed - 246 km/h near the ground, cruising speed - 157 km/h at an altitude of 1000 m, range - 962 km, time to climb 3000 m - 10.15 min, service ceiling - 5420 m, armament mission - one 7.7 mm machine gun and 60 kg of bombs.

WELL

The first sample of a twin-engine patrol boat called N5U was built in 1936. Serial production of aircraft of the N5YI version (flying boat marine type 99 model 11), equipped with Mitsubishi Sinten-21 engines, was carried out until the end of 1941 at the company Daijichi kaigun kokuso. In total, 20 vehicles were built, which had the Allied code designation "Cherry".

Characteristics of N5U1: power plant - 2 Sinten-21 engines with a capacity of 1200 hp each. With. (895 kW), roof span

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la - 31.57 m, aircraft length - 20.5 m, take-off weight - 11,500 kg, maximum speed - 300 km / h At an altitude of 700 m, range - 4648 km, armament - three 7.7-mm machine guns and two 250 kg bomb.

K5Y tee.

The development of the training biplane KSY began in 1932. fleet order. The first experimental aircraft, powered by the Hitachi Amakaze-11 engine, was flown in December 1933. According to the test results, it was put into production in Jan-Bape 1934 at the Kawanishi company under the designation KUU (transitional training aircraft marine type 93). It was produced with two chassis options - wheeled and float, depending on the type of engine, had the following designations: K5Y1 and KSY2 with an Amakaze-11 engine, KUUZ with an Amakaze-21 engine with a power of 515 HP, KSY4 with an engine "Amakaze" -21A with a capacity of 480 liters. c., K5-5 engine "Amakaze"-15 with a capacity of 515 hp. With. The aircraft was widely used throughout the war, it was armed with five kokutais. A total of 5,770 KSY machines (Allied code designation "Willow") were produced, including 872 K5-2 floats.

Characteristics of K5U2: crew - 2 people, power yC-setting - | engine "Amakaze" -11 with a capacity of 340 liters. With. (254 kW), wing span - 11.0 m, wing area - 27.7 m², aircraft length - 8.78 m, height - 3.68 m, empty weight - 1150 kg, maximum takeoff weight - 1650 kg, maximum speed - 200 km / h at the ground, cruising speed - 140 km / h at an altitude of 1000 m, range - 700 km, time to climb 3000 m - 19.6 min, practical ceiling - 4330 m, armament - two 7.7 mm machine gun and up to 100 kg of bombs.

MXU7

In the summer of 1944, Japanese Naval Staff seriously considered for the first time the concept of using suicide attack tactics. A draft project for a manned projectile, developed under the direction of officer Mitsuo Ota of the 405th Kokutai, was transferred to the I Naval Arsenal in Yokosuka.
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tal study. The completed vehicle, which received the o00-value MXU7 "Oka" ("Cherry Leaf") (special assault aircraft of the sea "Oka" model 11), was a small aircraft without landing gear, equipped with three solid-propellant rockets with a total thrust of 800 kgf in the rear fuselage and a 1200 kg warhead in the bow. The G4M2 bomber was supposed to be used as a carrier aircraft. However, the dimensions

The projectile was not allowed to be placed in the bomb bay, so the carrier was modified, for which the wings were removed and the length of the compartment was increased. The modified bomber received the designation C4M2e. The Oka was mounted in a semi-recessed TOJO in the bomb bay in front of the cockpit.

The cockpit of the Oka was equipped with a minimum of instrumentation, which consisted of an altimeter, a speedometer, a compass, an angle of attack sensor and a simple frame sight, the aircraft was controlled using a conventional aircraft stick. The fuselage was made of aluminum alloys, the wing and tail were made of wood. It was supposed to launch the device from a carrier aircraft at altitudes up to 8000 m and distances of 50-80 km from the target. At a distance of about 40 km from the target, the pilot of the projectile aircraft had to turn on the power plant, the operating time of which was 8-10 s, after which the device, having accelerated, had to leave on the target and attack it.

Already by September 1944, 10 MXY7 machines were ready. Non-motorized flights began in October 1944, the next month tests were already carried out with the inclusion of rocket boosters. Without waiting for the end of the tests, the fleet ordered the mass production of the aircraft, and by March 1945, 755 Oka model 11 devices were built. C4M2e carrier aircraft tried to break through the K targets, but were intercepted by American fighters and forced to fire shells into flight too early. On April 1, the American battleship West Virginia and three transport ships were attacked and damaged by Okami. Other suicide attacks have also had limited success. Vulnerability and insufficient capacity of the carrier aircraft that were supposed to deliver the aircraft

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close enough to the target, forced to curtail the production of model 11 in March 1945. The MXY7 manned projectile had the Allied code designation "Baka".

A project was developed for the Oka projectile, model 22, for the PLY! or PLY3. The Model 22, which had a shorter wingspan than the Model 11, had a warhead weighing only 600 kg. For Toro, in order to increase the range of the projectile, it was decided to equip it with a Tsu-11 compressor jet engine driven by a piston engine. Tests in July 1945 showed that the thrust of the power plant was small, so after the release of 50 copies of the "Oka" model 22 at the plants of the company "Aichi" its production was stopped.

The Oka Model 33 was an enlarged version of the Model 22, equipped with a He-20 turbojet engine and a 300 kg warhead. For this option, it was supposed to use the G8N1 bomber as a carrier aircraft. But delays in the development of the carrier caused the cessation of work on the Model 33.

To launch from catapults, model 43 was developed in two versions of the Oka, equipped with a Ne-20 turbojet engine. The Model 43A, designed to be launched from submarine catapults, had to have foldable wing panels to accommodate the boat's hangar. Model 43B was similar to model 43A, HO was intended for coastal defense units. After launching from a catapult, the Model 43B could drop its wingtips to achieve maximum speed. By the end of the war, the first sample of the projectile, model 43B, was in assembly; flaps and a landing ski were tanned, one rocket booster was installed in the rear fuselage.

There were other options in development: model 11 with a steel wing developed by Nakajima, model 21 (model 22 airframe with an engine from model 11) and model 53 with an He-20 engine, which was supposed to be delivered to the target on tug behind the plane.

Characteristics of the "Oka" model 11: power plant - three rocket boosters "type 4 brand | model 20" with a thrust of 800 kgf,

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wingspan - 5.12 m and wing area - 6.02 m², aircraft length - 6.07 m, height - 1.16 m, empty weight - 440 kg, flight weight - 2140 kg, warhead weight - 1200 kg, maximum horizontal flight speed - 650 km / h, maximum dive speed - 927 km / h, range - 37 km.

Characteristics of the "Oka" model 22: power plant - Tsu-11 compressor engine with a thrust of 200 kgf, wingspan - 4.12 m and its area - 4.02 m², length - 6.88 m, height - 1.15 m, empty weight - 545 kg, warhead weight - 600 kg, flight weight - 1450 kg, maximum speed - 480 km/h, maximum dive speed - 800 km/h, range - 88 km.

Characteristics of the "Oka" model 43B: power plant - TRD Ne-20 with a thrust of 475 kgf, wingspan - 9.0 m and its area - 13.0 m², length - 8.16 m, height - 1.15 m, weight empty - 1150 kg, warhead weight - 800 kg, flight weight - 2270 kg, maximum speed - 557 km/h, range - 189 km.

PLY

In 1940, the I Naval Arsenal received an order to develop a torpedo bomber and a dive bomber PLY "Ginga" ("Milky Way") with two engines. Serial production of the aircraft was planned to be organized at the Nakajima plant in Kaizumi. The first prototype aircraft powered by Homare-11 engines with a power of 1820 hp each. With. It was built in August 1943. A year later, the aircraft was put into service under the designation 海軍艦上攻撃機 11 型 (sea type 4 bomber model 11) with Homare-12 engines, it received the Allied designation Frances. Due to problems with the reliability of the engine, deliveries of serial vehicles to the troops began in the spring of 1945.

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The fighter version of the P1Y aircraft was developed by the Kawanishi company. The Homare engine was replaced with the Kasei-25a engine, and instead of the nose gun, two 20-mm guns were installed for firing at an angle to the horizon. This variant of the machine, which received the designation 艦上戦闘機 2-5 型 "Kyokoo" ("Morning-HAA dawn") (naval night fighter), took off for the first time in June 1944, after which it was decided to put it into mass production. However, the combat qualities of the new fighter turned out to be low, so most of the 96

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built machines of this version were used as P1Y2 bombers. Until the end of the war, RTU, RIU4, R1U5, and R1Ub variants were under development, but there was no time left for their serial production. The total number of PLY machines built was 1098 units. Characteristics of RIYI: crew - 3 people, power plant - 2 Homare-12 engines with a capacity of 1825 hp each. With. (1361 kW), wingspan - 20.0 m, wing area - 55.0 m², aircraft length - 15.0 m, height - 4.3 m, empty weight - 7265 kg, maximum takeoff weight - 13,300 kg, maximum speed - 550 km/h at an altitude of 5900 m, range - 1900 km, time to climb 3000 m - 4.25 min, service ceiling - 9400 m, armament - two 20-mm guns and up to 1600 kg of bombs.

R2Y

In 1942, the fleet issued a task to develop a long-range high-speed reconnaissance aircraft. Initially, the RLY aircraft project was developed! "Shoyun" ("Blue Cloud") for the new engine of the company "Mitsubishi" with a capacity of 2500 liters. With. However, problems with the development of the engine forced to abandon it and stop at the Na-70 engine, which was a pair of two Aichi Atsuta-30 engines that worked on one propeller. This version of the aircraft received the designation R2Y1 "Keyun" ("Cirrus Cloud").

After several defeats of the Japanese in the Pacific Ocean, the need for a long-range naval reconnaissance aircraft disappeared, therefore, at the end of 1944, it was proposed to create on the basis of K2Y1 peak-active

bomber R2Y2. To do this, it was planned to replace the twin engines in the fuselage with a fuel tank, and install two Ne-330 turbojet engines with a thrust of 1320 kgf each under the wing. The aircraft was supposed to carry one 800-kg bomb under the fuselage. It was decided to test a prototype propeller-driven aircraft R2Y1 until the jet engines were ready. First flight of prototype K2U aircraft | took place on May 8, 1945, but was interrupted due to engine problems. Before the engine could be replaced with a new one, the aircraft was destroyed during an Allied bomber raid. Until the end of the war, the second sample K2Y1 and the prototype of the R2Y2 jet machine was almost completed.

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Characteristics of R2Y1: crew — 2 people, power plant — | Na-70 engine with a capacity of 3400 liters. With. (2635 kW), wingspan - 14.0 m and its area - 34.0 m², aircraft length - 13.05 m, height - 4.24 m, empty weight - 6015 kg, maximum takeoff weight - 9400 kg, maximum speed - 715 km / h at an altitude of 10,000 m, cruising speed - 460 km / h at an altitude of 1000 m, range - 3600 km, time to climb 10,000 m - 10.0 min, service ceiling - 11 700 m

"Kawanishi"

Aircraft manufacturing company Kawanishi Kokuki Kabushiki Kaisha was established in 1928 on the basis of the Kawanishi Machine Building Plant. During the Second World War, the company was the sixth in Japan in terms of production of combat aircraft. Kawanishi included four factories. Three of them—Himeji northwest of Kobe, Hapyo near Osaka, and Kongsan between Osaka and Kobe—manufactured aircraft, the fourth (Gakaratsuka) located north of Naruo, supplied units and spare parts to three other plants.

E7K

Prototype of the reconnaissance seaplane-biplane E7K, equipped with a Hiro engine with an HP 520 power. s., first took off in 1933. The following year, serial production of machines of the E7K1 version (reconnaissance seaplane type 94 model 11) began. Four years later, testing of an experimental model of the E7K2 version with a more powerful Zuisui-11 engine began. E7K2 serial reconnaissance aircraft (Allied code designation "Alf") were based on the Chitose and Chiyoda aircraft carriers, and the Mikuma cruisers. ", "Furutaka", "Kako", "Kitakami", "Kuma", etc., and were also in service with the 19th Kokutai and Kokutai "Chin Kai" and "Kure". The total number of E7K version aircraft built before 1939 | and E7K2 amounted to 530 copies.

Characteristics of E7K2: crew - 3 people, power plant - | engine "Zuisui" -11 with a capacity of 870 liters. With. (649 kW), wingspan - 14.0 and their area - 43.6 m²,

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aircraft length - 10.5 m, height - 4.55 m, empty weight - 2100 kg, takeoff weight - 3300 kg, maximum speed - 277 km / h at an altitude of 2000 m, climb time of 3000 m - 9.1 min, practical ceiling - 6250 m, armament - three 7.7-mm machine guns type 92 and four 30-kg bombs or two 60-kg bombs.

E15K

In 1939, the Kawanishi firm received a contract for the development of a high-speed float reconnaissance aircraft, which, in case of danger, could break away from the pursuit of enemy fighters. The main float was mounted under the fuselage on a pylon rack, if necessary, the rack together with the float could be dropped, which made it possible to increase the flight speed by 90 km / h. Stabilizing floats in flight were pressed against the wing, and in the event of a reset of the main float, they provided the aircraft with buoyancy when landing on water.

The first prototype of the E15K1 "Siyun" ("Purple Cloud") aircraft took off on December 5, 1941, it was equipped with a "Kasey"-14 engine with a capacity of 1500 hp. with., developed by Mitsubishi. In October 1942, the aircraft was handed over to the fleet for military trials, but during the trials it was damaged. It was soon restored and improved.

Serial E15K1 aircraft (high-speed reconnaissance seaplane type 3 model 11) were equipped with a more powerful Kasei-24 engine and had stabilizing floats fixed with struts. Six machines were sent to Palau for military trials, but soon they were all lost. In February 1944, the production of the aircraft (the code designation of the Allies "Mogt") was discontinued, by that time only 15 had been built.

machines.

Characteristics of E15K1: crew - 2 people, power plant - 1 engine "Kasey" -24 with a capacity of 1850 liters. With. (1380 kW), wingspan - 14.0 m, its area - 30.0 m², aircraft length - 11.59 m, height - 4.95 m, empty weight - 3165 kg, maximum take-off weight - 4100 kg, maximum - speed - 408 km/h at an altitude of 5700 m, cruising speed - 295 km/h at an altitude of 2500 m, range - 3370 km,

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time to climb 6000 m - 10.0 min, practical ceiling - 9830 m, armament - one 7.7-mm machine gun type 92 and two 60-kg bombs.

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The first flight of the H6K four-engine flying boat prototype took place on July 14, 1936, and on July 25 the aircraft was handed over to the fleet for trials. In 1937, the second and third machines were built, and the fourth at the beginning of 1938. After the completion of military trials, prototype machines were supplied with Mitsubishi Kinsei-43 engines with a capacity of 1000 hp each. s., these boats entered service under the designation H6K1 (sea flying boat type 97 model 11).

In April 1940, 10 boats of the H6K2 version (sea flying boat type 97 model 21) entered service, which differed slightly from the first version. Two of them were soon converted into a transport version, after which two more transport aircraft were flown under the designation H6K3.

However, the long-range naval reconnaissance aircraft H6K4 became the main variant, the number of boats of this variant by the beginning of the war amounted to 66 units. In 1941, the H6KS version, equipped with more powerful Kinsei-53 engines, rolled off the assembly lines and received the code designation Mavis from the Allies. The H6K boats were in service with the 8th, 14th, 801st Kokutais, as well as the TOKO and Yokohama Kokutais. Boats under the designation H6K2-L, H6K3 and H6K4-L were used as transport and command aircraft in the Pacific region in 1943. The total number of H6Ks built was 175 machines.

Characteristics of the H6KS: crew - 9 people, power plant - 4 Kinsei-53 engines with a capacity of 1300 hp each. With. (969 kW), wing span - 40.0 m and its area - 170.0 m², aircraft length - 26.6 m, height - 6.27 m, empty weight - 12,380 kg, maximum takeoff weight - 23,000 kg, maximum speed - 385 km / h at an altitude of 6000 m, range - 6775 km, time to climb 5000 m - 13.4 min, service ceiling - 9600 m, armament - one 20-mm cannon, six 7.7 -mm machine guns and 2000 kg bombs or two 800 kg torpedoes.

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, The development of a reconnaissance flying boat began in 1938, and in January of the following year, a prototype machine took off for the first time. During high-speed taxiing and on takeoff, the aircraft showed itself

extremely unstable, so it was returned to the factory. After numerous improvements and successful completion of operational tests at the end of 1941, the aircraft was ordered for production under the designation H8K1 (sea flying boat type 2 model 11). It was equipped with four Mitsubishi Kasei engines with a capacity of 1530 hp each. s., the armament of the first machines included two 20-mm cannons and four 7.7-mm machine guns, the aircraft could also carry two 800-kg torpedoes or eight 250-kg bombs. With armor, sealed fuel tanks and increased top speed, the new boat represented a significant improvement over the H6K.

For the first time, the H8K1 boat took part in hostilities in March 1942, when two planes from the Kokutai Yokohama took off on the night of March 5 from one of the atolls of the Marshall Islands to bomb Pearl Harbor, refueling en route from a submarine. However, having reached the American base, the Japanese crews performed the attack unsuccessfully due to bad weather conditions. Nevertheless, as a long-range naval reconnaissance aircraft, the H8K1 (code designation "Emily"), with its long flight range and powerful weapons, commanded respect from the Allies.

Since 1943, an improved version of the H8K2 appeared, equipped with Kasei-22 engines and even more powerful weapons; a total of 112 aircraft of this version were built before the end of the war. Such radar-equipped vehicles sank at least three American submarines north of the Philippines during the last year and a half of the war. In addition to the naval reconnaissance version, 36 boats were built under the designation H8K2-L, they were used as command and transport aircraft. One such aircraft could carry 29 staff officers or 64 fully equipped paratroopers. The deteriorating military situation for Japan with each passing month led to a decrease in the demand for boats in 1945, so the production of later versions of the H&K was stopped. However, this aircraft until the end of the war

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I was armed with 14, 801, 851, 1001 and 1021 Kokutais, as well as Gakuma, Toko, Yokohama and Yokosuka Kokutais. A total of 167 copies of the H8K were produced during the war years. Characteristics of N8K2: crew - 10 people, power plant - 4 Kasei-22 engines with a capacity of 1850 hp each. With. (1380 kW), wing span - 38.0 m and its area - 160.0 m², length of the aircraft - 28.13 m, height - 9.15 m, empty weight - 18 380 kg, maximum takeoff weight - 32 500 kg, maximum speed - 467 km / h at an altitude of 5000 m, range - 7180 km, time to climb 5000 m - 10.2 min, practical ceiling - 8760 m, armament - five 20-mm cannons, four 7.7 mm machine gun and 2000 kg bombs or two 800 kg torpedoes.

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In September 1940, the development of a single-seat float fighter-interceptor NIK "Kyofu" ("Mighty Wind") began. The car was equipped with a Mitsubishi Kasei 14 engine with coaxial propellers. The main float was attached under the fuselage on the U-shaped front pillar and rear pylon. Initially, it was supposed to put retractable underwing floats, but fixed floats were installed on the first prototype to speed up work. The armament was set the same as on the A6M2 fighter.

The first flight of the experimental machine was carried out on May 6, 1942. However, due to problems with the pitch control system for coaxial propellers, the Kasei-14 engine was replaced by the Kasei-13 engine with a conventional three-blade propeller. The new engine was installed on the second experimental machine. In August 1942, eight pre-production aircraft were handed over to the fleet for military trials, after which a series was launched under the designation MIKI (float fighter marine type 2 model 11). Serial vehicles began to be delivered in the spring of 1943, but the pace of production grew slowly, in December of the same year, the production amounted to only 15 vehicles. By that time, the military situation had changed not in favor of Japan, so the need for a fighter supporting offensive landing operations disappeared. It was decided to stop production, the last aircraft of this type was delivered to the 89th Kokutai in March 1944. At the end of the war, MIKI aircraft,

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codenamed "Rex" by the allies, they operated as part of the "Otsu" kokutai, based on Lake Biwa and covering the sky over Honshu from American bombers. |

The total number of M1K1 aircraft built was 97. An improved version of the M1K2 aircraft was also developed, equipped with a Kasei-23 engine with a power of 1900 hp. With. However, work on it was stopped.

Characteristics of NIKI: crew — | man, power yC-training — | engine "Kasey" -13 with a capacity of 1460 liters. With. (1089 kW), wing span - 12.0 m and its area - 23.5 m, aircraft length - 10.59 m, height - 4.75 m, empty weight - 2752 kg, maximum takeoff weight - 3712 kg, maximum speed - 489 km / h at an altitude of 5700 m, range - 1050 km, time to climb 5000 m - 5.5 minutes, practical MOTO-lok - 10,600 m, armament - two 20-MM guns, two 7.7- mm machine gun and two 30-kg bombs under the wing.

N1K1-J/ N1K2-J

In parallel with the work on the M1K1 naval hydroplane fighter, the company began designing a land version of the fighter with a wheeled chassis. The prototype of the new machine, which had the designation "experimental coastal fighter", first took off on December 27, 1942, it was equipped with a Nakajima Homare-11 engine with a capacity of 1820 hp. With. By July 1943, four experimental Ca-planes were built, one of which was handed over to the fleet for testing. Based on the test results, it was decided to launch the fighter in a series under the designation N1K1-J "Cunen" ("Purple Lightning") with a more powerful Homare-21 engine. The first production vehicles appeared by the end of 1943 under the designation ŷ1ŷ1-4 (fighter-interceptor marine type 3 model 11).

Despite the fact that during operation there were often problems with the engine and the strength of the chassis, the Syden fighter (the code designation of the Allies was George) was not inferior to the American F6F aircraft in combat. Bcero has developed four versions of the fighter. At most KO- version was produced NIKI-J (model 11) with two

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7.7 mm type 97 machine guns in the nose and four 20 mm type 99 cannons in the wing and underwing gondolas. The MK11-Ja version (PA model) differed only in its armament of Yete 20-MM wing cannons. The N1K1-Jb version (Model 118) had four 20mm cannons and two underwing carriers for 250kg bombs. The fighter-bomber version of the MIKI-ŷs (PS model) had four bomb holders. An experimental N1K1-Jc-Kan interceptor was also developed with an additional solid rocket booster under the fuselage.

The company developed an improved version of the fighter, the prototype of this version took off for the first time on December 31, 1943. By June 1944, seven more experimental aircraft were built, the aircraft went into series under the designation ŷŷŷ2-) (fighter-interceptor marine type 3 model 21). In battle, the M1K2-J showed his best side. An example of this was the air battle of K. Muto from the 343rd Kokutai with twelve American Hellcat fighters. Muto shot down four American fighters and put the rest to flight. A total of 1435 machines of all modifications were produced, including 998 MIKI-) and 415 MIKO-).

Characteristics of NIKI-J: crew - | man, power plant - | engine "Homare" -21 with a capacity of 1990 liters. With. (1484 kW), wing span - 12.0 m and its area - 23.5 m, aircraft length - 8.89 m, height - 4.06 m, empty weight - 2897 kg, maximum takeoff weight - 4321 kg, maximum speed - 584 km/h at an altitude of 5900 m, range - 1432 km, time to climb 6000 m - 7.8 min, service ceiling - 12500 m, armament - four 20-mm guns type 99 and two 7.7 mm type 97 machine guns.

"Kawasaki"

The shipbuilding firm "Kawasaki" ("Kawasaki kokuki Koré kabushiki kaisha") was founded in 1878, and in 1918 Bee organized an aircraft building department, one of the first in the country. Two years later, the company built an aircraft factory and an airfield. The first government order was a contract for the construction of 300 licensed aircraft-raz

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"Salmson" messengers for the Japanese army. Initially, the company relied on attracting foreign specialists. So, for example, since 1923, the German Richard Vogt worked as the chief designer of the company, he remained in this position for a decade and trained many Japanese specialists. Among his projects were such biplane aircraft as the Type 88 reconnaissance bomber, Type 92 fighter and Ki-3 bomber.

After the departure of R. Vogt, in 1936 the Ku-10 fighter, and in 1938 the Ku-32 light bomber and its training version were produced. In 1937, the aircraft building department was transformed into a separate company, and two years later, the production of aircraft engines began. In terms of production during the war (8250 aircraft), Kawasaki ranked third among Japanese firms. The key aircraft were the Ki-45, Ki-61 and one M3 of the best Japanese fighters of the war, the Ki-100.

Ku-3

The Ki-3 aircraft (army type 93 light single-engine bomber) was put into service in 1933. It was widely used at the first stage of the Sino-Japanese conflict. Since the beginning of the Pacific War, it has been used in China as a liaison and general purpose aircraft. The total number of Ki-3 aircraft built was 243.

Characteristics of Ki-3: crew - 2 people, power plant - | BMW IX engine with 800 hp With. (597 kW), wing span - 13.0 m and its area - 38.0 m², aircraft length - 10.0 m, height - 3.0 m, empty weight - 1650 kg, takeoff weight - 3100 kg, maximum speed - 260 km / h, climb time of 3000 m - 12.0 minutes, service ceiling - 7000 m, armament - two 7.7-MM machine guns and 500 kg of bombs.

Ki-10

The Ki-10 fighter first took off in March 1935. Serial production of the aircraft under the designation Ki-10-1 (fighter type 95 army model 1) began in April 1936,

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then the Ki-10-P variant (army type 95 model 2 fighter) went into production.

The Ki-10 fighter participated in the Sino-Japanese war and in the conflict at Khalkhin Gol. During the Second World War, it was used mainly for training purposes. A total of 588 Ki-10s (Allied code designation Reggu) were built.

Characteristics of the Ki-10-P: crew - | person, power plant - 1 Kawasaki Na-9-Pa engine with a capacity of 850 liters. With. (634 kW), wingspan - 10.02 m and their area - 23.0 m², aircraft length - 7.55 m, height - 3.0 m, Bec nyc-togo - 1360 kg, take-off weight - 1740 kg, maximum speed — 400 km/h at an altitude of 3000 m, range — 1100 km, time to climb 5000 m — 5.0 min, service ceiling — 11,500 m, armament — two 7.7-MM machine gun type 89.

Ki-32

In May 1936, Kawasaki began developing the Ki-32 light bomber. In March of the following year, eight experimental machines were flight tested, but the tests were accompanied by frequent engine failures, which forced the power plant to be redesigned.

In July 1938, serial production of the aircraft began under the designation Ki-32 (military type 98 light single-engine bomber). According to its characteristics, the bomber was already considered obsolete by the beginning of the war, but in December 1941 Ki-32 aircraft were still used in combat units, in particular during raids on Hong Kong. Soon all the remaining vehicles were transferred to training units. The total number of Ki-32s built (Allied code "Magu") was 850.

Characteristics of the Ki-32: crew - 2 people, power plant - 1 Na-9-Pb engine with a capacity of 850 liters. With. (634 kW), wing span - 15.0 m and its area - 34.0 m², aircraft length - 11.64 m, height - 2.9 m, empty weight - 2349 kg, maximum takeoff weight - 3762 kg, maximum speed - 423 km / h at an altitude of 3940 m, range - 1960 km, time to climb 5000 m - 10.9 min, service ceiling - 8920 m, armament - two 7.7-MM machine guns and up to 450 kg of bombs.

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Ki-45

In early 1937, Kawasaki received an order from the army to develop a long-range twin-engine fighter. The first model of the two-seat fighter Ki-45 "Goryu" ("Dragon Slayer") took off in 1939. Due to problems with the engines, the production of the aircraft began only in September 1941 under the designation Ki-45 Kai (a) (two- military fighter type 2 model A). The armament of this version included one 20 mm cannon, two 12.7 mm machine guns and one 7.92 mm machine gun, the aircraft could carry two drop tanks or two 250 kg bombs under the wing.

The fighter entered service in August 1942 with the 5th Sentai, which initially performed the functions of a unit for retraining pilots on the Ki-45. The Ki-45 first saw action in October 1942 as part of the 21st Sentai, based in Burma, and on the 16th Sentai, which arrived in China a month later. At that time, Japanese aircraft had air superiority over the Allies, so the TORYU, codenamed "Nick" by the Allies, was often used for anti-ship and assault operations, in which this aircraft achieved significant success.

Soon a new version of the Ki-45 Kan (b) appeared, specially designed to fulfill the role of an attack aircraft. The standard armament of this version included one 20 mm cannon in the nose, a forward-firing 37 mm cannon in the fuselage and one 7.92-mm machine gun for rear firing, in addition, there were hardpoints for dropped tanks or bombs. When testing the aircraft, various weapons were evaluated, including a 75-mm cannon for attacking ships.

The Ki-45 Kai(a) aircraft was quite well armed for its time and proved to be effective against the American B-24 bombers, which led to the creation of the Ki-45 Kai(s) night fighter, which became one of the most successful Japanese aircraft in the world. this category. The first serial aircraft Ki-45 Kai(s) was assembled in April 1944, and at the beginning of 1945 such machines, equipped with one gun for firing forward and two guns for firing forward-up, were already in service 53 th sentai. In parallel with the Ki-45 Kai (s), the production of anti-ship

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version of the Ki-45 Kai(d), whose armament included two 20 mm cannons in the nose, one ventral 37 mm cannon, one 7.92 mm machine gun and two 250-kg bombs. The effectiveness of the use of the Ki-45 aircraft during night interceptions of allied bombers was, in

in particular, demonstrated by Lieutenant S. Kimura, who on the night of June 14/15, 1944 shot down two B-29 bombers and damaged three more, and on the night of March 27/28, 1945, having made three sorties, shot down five B-29s and damaged two more. Sergeant N. Negishi, who flew the Ki-45, by the end of the war had 6 shot downs and 7 damaged B-29s.

Some early versions of the Ki-45 were modified in the field to carry out suicide attacks. The first attempt to carry out a pre-planned suicide ram took place on May 27, 1944. At 1700 hours, two Ki-45 aircraft, accompanied by 5 cover fighters, took off towards Biak Island. This group of planes, having passed at a low altitude over the island, suddenly appeared off the coast with the aim of attacking the landing American troops. One of the Ki-45s was shot down by hurricane fire from coastal and naval anti-aircraft guns, but the second plane, deftly maneuvering, headed for the destroyer Samson. Near the destroyer, he was nevertheless shot down, but falling into the water, he touched the stern of the destroyer, and then exploded next to a small anti-submarine ship. The anti-submarine ship itself survived, but several of its crew members were killed in the explosion.

The Ki-45 remained in service until the end of the Pacific War in ten cents, the total production of the aircraft was 1701 copies, they were used to protect Tokyo, Manchuria, Burma and Sumatra. At the end of the war, the aircraft was used for ram attacks against Allied bombers. For example, Lieutenant M. Yamamoto in an air battle over Fukuoka Prefecture on a Ki-45 fighter rammed an American B-29 bomber and died in the process.

Characteristics of Ki-45 Kai(s): crew - 2 people, power plant - two Mitsubishi Na-102 engines with a capacity of 1080 hp each. With. (805 kW), wing span - 15.05 m and its area - 32.0 m², aircraft length - 11.0 m, height - 3.7 m, empty weight - 4000 kg, maximum takeoff weight - 5500 kg, maximum speed - 545 km / h at an altitude of 7000 m, distance

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range - 2000 km, time to climb 5000 m - 6,011 min, service ceiling - 10,000 m, armament - three 20-MM guns and two 250-kg bombs or two hanging tanks under the wing.

Ki-48

Work on the Ki-48 light bomber began in January 1938. The aircraft was equipped with two Nakajima Na-25 engines with an output of 950 hp each. with., the crew consisted of four people. The aircraft was put into service in the summer of 1940 under the designation Ki-48-*kyō* (light twin-engine bomber army type 99 model 1A).

The first mass-produced vehicles left the assembly line in July 1940, they soon entered service with the 45th Sentai, which took part in the hostilities in Northern China in the fall. There, the aircraft, which did not have serious opposition from the Chinese Air Force, was used not only as a front-line bomber, but also as a long-range and night bomber. By June 1942, 557 vehicles of the Ki-48-1a and Ki-48-1b variants with more powerful weapons were produced, which were in service with the 8th, 27th, 75th and 90th Sentai operating in Burma, Malaya, in East Indies and the Philippines. The Allies gave the bomber the code designation "Lily".

An improved version of the Ki-48-P, put into production in the spring of 1942, had a longer fuselage, sealed fuel tanks, armored crew seats, increased bomb load, and more powerful Na-115 engines. When the Ki-48-P was put into service, it became clear that its speed characteristics were not very good and it had inadequate defensive armament. Many aircraft were lost in the air and on the ground during the fighting in New Guinea, so in October 1944 the Ki-48 was taken out of service. The remaining vehicles were used in the Philippines and as night fighters over Okinawa, but the main way they were used was to use for

suicide attacks. Such aircraft were designated Ki-48-P Kai (special army assault aircraft type 99). In this variant with

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In the summer, all unnecessary equipment was removed, and the control system, designed as standard for two KOB pilots, was converted to single control. One bomb weighing 800 kg was installed in the bomb bay, and a long rod of the fuse percussion mechanism was mounted in the nose of the aircraft.

In 1944, four Ki-48-Pb were modified to test the [O-1B] guided bomb. The total number of Ki-48 bombers built was 1977.

Characteristics of the Ki-48-Pb: crew - 4 people, power plant - 2 Nakajima Na-115 engines with a capacity of 1150 hp each. With. (858 kW), wing span - 17.45 m and its area - 40.0 m², aircraft length - 12.75 m, height - 3.8 m, empty weight - 4550 kg, maximum takeoff weight - 6750 kg, maximum speed - 505 km/h at an altitude of 5600 m, range - 2400 km, service ceiling - 10,100 m, armament - three 7.7-mm machine guns and up to 800 kg of bombs.

Ki-56

In 1939, the Japanese acquired a license for the production of a twin-engine transport aircraft 14-WG3 from the American firm Lockheed (Japanese designation - "transport aircraft type LO", Allied code designation - "Thelma"). In September of the same year, Kawasaki received an order from the Army Aviation Headquarters to develop an improved version based on a licensed aircraft, which received the designation Ki-56. It was planned to improve the takeoff and landing characteristics of the machine and increase the volume of the cargo compartment.

The modified car received a fuselage lengthened by 1.5 m, new flaps, a modified cargo compartment and new Nakajima Na-25 engines. The total payload after completion reached 2400 kg. The first two experimental aircraft were produced in November 1940. According to the test results, the aircraft was put into series under the designation "army type 1 transport aircraft", it was produced until October 1943, the total number of aircraft built was 121 copies. aircraft widely used

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Used for BO transportation during the Pacific War, the Allies had the code designation "Thalia".

Characteristics of the Ki-56: crew - 4 people, power plant - 2 Na-25 engines with a capacity of 990 hp each. With. (739 kW), wing span - 19.96 m and its area - 51.2 m², aircraft length - 14.9 m, height - 3.6 m, empty weight - 4895 kg, maximum takeoff weight - 8025 kg, maximum speed - 400 km/h at an altitude of 3500 m, time to climb 3000 m - 12.55 minutes, service ceiling - 8000 m.

Ki-61

In December 1940, the design of the Ki-61 Hien (Swallow) fighter began, the prototype of which first flew in December of the following year. Comparative tests of a prototype fighter were carried out with the participation of the Ki-43-1, Ki-44-I, Bf 109E-3 (two of these machines were purchased by the Japanese) and the captured P-40E (several aircraft were captured in the Philippines and in the East Indies). During the tests, the Ki-61 proved to be the fastest and without much difficulty conducted an air battle with its opponents. Serial production of the fighter under the designation Ki-61-1 (military type 2 fighter model 1) began in the second half of 1942. high 7.7 mm machine guns and Ki-61-1b with four 12.7 mm machine guns.

The first serial machines arrived in February 1943 in the 23rd separate chutai, which was retraining pilots for new types of aircraft, and in April they entered the 68th and 78th sentai, who arrived in New Guinea. The Hien (Allied code designation "Gopu") enjoyed NONY-largeness with Japanese pilots, was well-armed and armored, and in terms of its characteristics it was not inferior to the Allied fighters. However, combat experience has shown that even more powerful weapons of the Ki-61-P version turned out to be enough Heno to effectively shoot down allied bombers. Therefore, before the appearance of Japanese 20-mm guns, it was decided to equip the aircraft with a pair of German MC 151 guns, 800 of which were received in August 1943. There were up to

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388 Ki-61-1a and Ku-61-lb vehicles were operated by installing two MO 151 wing cannons instead of machine guns.

The first Japanese 20-mm No-5 cannons that appeared were installed on aircraft of the Ki-61-1 Kai(s) version in the Hoco part of the fuselage. A small number of Ki-61-1 Kan (d) fighters were produced, which had two 30-mm wing cannons. Modifications of the Ki-61-1 and Ki-61-1 Kai remained in production until 1945, but in 1944 they were joined by the Ki-61-P fighter with a more powerful Na-140 engine, capable of intercepting V-29 bombers at large

heights.

At the end of the war, Ku-61 fighters were in service with the 18th, 23rd, 28th, 55th, 56th, 59th and 244th air defense sentais of the country, whose purpose was to protect the sky of Japan from attacks by American B-29 bombers. The task before the Japanese pilots was set very clearly - to shoot down the bombers that had broken through at any cost, up to the use of a ram. Already at the end of 1944, ramming as a method of attack became commonplace in the 244th sentai. So, for example, Lieutenant T. Shinomiya rammed a B-29 bomber on the night of December 3, managing to land his damaged car. That same night, his colleague, Sergeant M. Itagaki, rammed and damaged a B-29, after which he himself landed by parachute. January 27, 1945 M. Itagaki rammed the second B-29, and he again escaped by parachute. On the same day, the commander of the 244th Sentai, Captain T. Kobayashi, in an air battle over Mount Fuji at an altitude of 9000 m, rammed a B-29 and landed safely on a parachute, in total, T. Kobayashi shot down 3 and damaged 9 B- bombers 29. The total number of issued Ki-61 aircraft of all modifications was 1380 copies.

Characteristics of the Ki-61-1 Kai(s): crew - | person, power plant — one Kawasaki Ha-40V-12 engine with a capacity of 1180 hp. With. (880 kW), wing span - 12.0 m and its area - 20.0 m², aircraft length - 8.94 m, height - 3.7 m, empty weight - 2630 kg, takeoff weight - 3470 kg, maximum speed — 590 km/h at an altitude of 4,260 m, range — 1,800 km, time to climb 5,000 m — 7.0 min, service ceiling — 10,000 m, armament — two 20 mm guns and two 12.7 mm guns machine gun.

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Ku-100

The Ki-61-P fighter with the Na-140 engine, as mentioned above, intercepted B-29 bombers at altitudes up to 9000 m. However, the production of these engines was interrupted after the plant in Akashi was destroyed during one of the air raids. . Under these conditions, Kawasaki was instructed to urgently adapt 275 Ki-61-P machines at the Kagamigahara plant for an alternative engine.

It was decided to try on the first three machines the Mitsubishi Na-112-P engine, which had the same power as the already unavailable Na-140. The first flight of a fighter HOBbIM engine | February 1945 showed that Kawasaki had produced the best Japanese fighter of the war. ITO was confirmed, for example, by the list of BO3-stuffy victories of pilots from the 244th sentai flying the Ki-100. By the end of the war, Captain Ch. Ichikawa had 9

downed B-29s, 2 damaged B-29s and 1 B-29 shot down, and Captain H. Cupan - 11 B-29s shot down and 2 F6Fs shot down.

By the end of May 1945, all remaining 272 Ki-61s were equipped with new engines. The upgraded machine was designated Ki-100-Ta (army type 5 fighter model 1A). The Ki-100-ŷB version received an all-round vision canopy, originally planned for the Ki-61-Sh. The production of a new version of the aircraft was launched at the factories in Kagamigahara and Ichinomiya in May 1945. In total, the plant in Kagamigahara delivered 106 Ki-100-15 machines by the end of the war, and a little more than ten machines in Ichinomiya.

In order to improve the altitude performance, in March 1945, work began on a version of the Ki-100-P with a Mitsubishi Na-112-11(Ki) engine with a turbocharger and a water-methanol mixture injection system. The production launch of this version was planned in September 1945, but before the end of the war, only three prototypes were built, which passed flight tests.

Characteristics of Ki-100-1a/0: crew - 1 man, power plant - 1 engine Na-112-P with a capacity of 1500 hp (1119 kW), wingspan - 12.0 and its area - 20, 0 m², aircraft length - 8.8 m, height - 3.75 m, empty weight - 2700 kg, maximum takeoff weight - 3670 kg, maximum speed - 590 km / h at an altitude of 10,000 m, range - 2000 km,

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climb time 10,000 m - 20.0 min, service ceiling - 10,670 m, armament - two 20-mm cannons, two 12.7-mm machine guns and two 250-kg bombs or two hanging tanks under the wings.

Ki-102

Since December 1942, the company has been developing a single-seat Ki-96 fighter equipped with two engines. By the end of the summer of 1943, three prototypes of the fighter were in the assembly. However, even before the start of flight tests of the first prototype aircraft, the army aviation command revised its views on twin-engine single-seat fighters, so the company was offered to create the Ki-102 attack aircraft based on the Ki-96. To speed up the work, they retained the airframe and power plant from the Ki-96, but added cockpit armor, protectors for fuel tanks and more powerful weapons. The first of the three experimental Ki-102 aircraft took off for the first time in March 1944. Then the construction of a pre-production batch of 20 aircraft began, in October 1944 this type of fighter was put into production under the designation Ki-1026 (army type 4 ground attack aircraft). model B).

Even before the first flight of the prototype, the army aviation headquarters demanded the creation of a high-altitude version of the fighter based on the Ki-102. Six pre-production aircraft were converted into Ki-102a high-altitude fighters, outwardly they did not differ from the attack aircraft version, but were equipped with Mitsubishi Na-112-P (Ki) engines with turbochargers. In Kaye, one 37 mm and two 20 mm guns were installed. The first prototype of a high-altitude fighter took off in June 1944. After the successful completion of the tests of six prototype aircraft, a pre-production batch was ordered, but due to problems with the engine, only 15 Ki-102a aircraft were delivered before the end of the war.

A night fighter under the designation Ki-102s was also being developed, but there was only time left to build two prototypes. They had an increased wingspan, a longer fuselage, a redesigned tail unit, and a primitive AG radar. The armament of the aircraft consisted of two 30 mm No-105 cannons under the fuselage and two 20 mm cannons.

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Shek Ho-5, installed in the fuselage for firing forward and upward. A small number of Ki-102b aircraft, codenamed "Randy" by the Allies, participated in the defense of Okinawa, but most of the aircraft remained in reserve. The total number of Ki-102 aircraft produced was 238, of which 215 were Ki-102b.

Characteristics of the Ki-102: crew - 2 people, power plant - 2 Na-112-P engines with a capacity of 1500 hp each. With. (1119 kW), wing span - 15.57 m and its area - 34.0 m, aircraft length - 11.45 m, height - 3.7 m, empty weight - 4950 kg, maximum takeoff weight - 7300 kg, maximum - naya speed - 580 km / h at an altitude of 6000 m, range - 2000 km, service ceiling - 11,000 m, armament - one 57-mm cannon, two 20-mm cannons, one 12.7-mm machine gun and two 250- kg bombs or two hanging tanks under the wing.

"Kayaba"

Ka-1

In 1939, a two-seat autogyro KO-1A developed by Kellet was purchased from the USA for the army. This autogyro, equipped with a 225 hp L-4M4 engine. s., was intended for use as an artillery spotter. During flight tests, the gyroplane was broken, after which it was handed over to the Kayaba Seisakuso company in order to create a similar Japanese device.

The first aircraft produced by the company under the name Ka-1 and equipped with an Argus A8-10s engine took off on May 26, 1941. After successful tests of the autogyro, during which it demonstrated the ability to take off from a runway only a decision was made to launch it in a series. Serial devices began to enter service with artillery units. Soon, the production of single-seat anti-submarine vehicles began, with which civilian ships converted for military purposes were armed. The naval version of the autogyro could carry two 60 kg depth charges.

Kayaba carried out work to increase the carrying capacity of the gyroplane. One of the copies under the designation Ka-1 Kai was equipped with powder rocket boosters to the law

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forgings of the blades of the main rotor, while another instance under the designation Ka-2 was equipped with a Jacobs L-2MA-7 engine with a power of 240 hp. With. The total number of Ka-1 gyroplanes built was 240.

Characteristics of the Ka-1: crew - 2 people, power plant - 1 As-10c engine with a capacity of 240 hp. With. (179 kW), length – 9.2 M, rotor diameter – 12.2 m, empty weight – 775 kg, maximum takeoff weight – 1170 kg, maximum speed – 165 km/h, cruising speed – 115 km/h , time to climb 2000 m - 7.5 minutes, practical ceiling - 3500 m, armament - two 60-kg depth charges.

"Kokusai"

Ki-59/Ku-8

In 1939, the Army Aviation Headquarters ordered a prototype light transport aircraft under the designation Ki-59 from Kokusai (Nippon Koku kore KK). According to the results of flight tests conducted in June 1939, it was necessary to remake the nose to improve the pilot's visibility, increase the vertical tail area and change the shape of the landing gear fairings. After completion, the aircraft was put into mass production under the designation "army type 1 transport aircraft", it could simultaneously carry 11 Human.

However, the Ki-59 aircraft (the code designation of the Allies "Theresa") was not produced for long, in December 1941 it was converted into a glider, for which the engines were removed from it, and the landing gear was replaced with a ventral ski. The glider received the designation Ku-8-1 (experimental army transport glider), the glider was tested with the tug Ki-59. According to the test results, the glider was finalized and in 1944 it was launched into a series under the designation Ku-8-P (military type 4 transport glider model 2). It was equipped with an opening bow

part of the fuselage and could carry a light gun or 20 paratroopers, the glider was usually towed by a Ki-21 aircraft. The Allies gave the glider the code designation Gander or Goose.

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Characteristics of the Ki-59: power plant - 2 Na-13a engines with a power of 510 hp each. With. (380 kW), wingspan-17.0 m and wing area - 38.4 m², aircraft length - 12.5 m, height - 3.05 m, empty weight - 2880 kg, maximum take-off weight - 4240 kg, maximum speed - 300 km / h at an altitude of 2000 m.

Characteristics of the Ku-8-P: wingspan - 23.2 m, wing area - 50.7 m², airframe length - 13.31 m, empty weight - 1770 kg, take-off weight - 3500 kg, maximum towing speed - 224 km / h.

Ki-76 |

In 1940, the development of a communication aircraft and artillery spotter Ki-76 began, the prototype of which was the German aircraft Fi 156. The first flight of the prototype Ki-76 took place in May 1941. 1942 under the designation "communication aircraft army type 2". The aircraft was actively used until the very end of the war; the Allies had the code designation "Stella".

At the end of 1943, an anti-submarine modification of the Ki-76 aircraft was launched, equipped with a landing hook and capable of carrying two depth charges weighing 60 kg each. Aircraft of this modification were based on the Akitsu Maru aircraft carrier.

Characteristics of the Ki-76: crew - 2 people, power plant - 1 Hitachi Na-42 engine with a capacity of 310 hp. With. (231 kW), wing span - 13.0 m and wing area - 29.4 m², aircraft length - 9.51 m, height - 2.9 m, empty weight - 1110 kg, maximum takeoff weight - 1620 kg, maximum speed — 178 km/h, range — 750 km, practical ceiling — 5630 M, armament — one 7.7-mm machine gun type 89.

"Kyushu"

Kyushu Hikoki KK was founded in 1943 on the basis of Watanabe Tekkoso KK, which had been producing training aircraft since 1931. The company's production was located on the island of Kyushu, where in addition to the existing three small factories in 1944-1945. three additional factories were built. In

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During the war, the company produced E3A, E14U, ASM, JTW, QIW, KUM, KOM and KPU aircraft, and also manufactured wing panels for G4M aircraft and was the second manufacturer of aircraft wheels in Japan.

E9MU

In 1936, Watanabe developed a twin-float biplane under the designation E9W. It was intended as a reconnaissance spotter for use from submarines. In the stowed position, the vehicle was located in a hangar on the deck of a submarine. E9UU scouts took part in the fighting in China, as well as at the beginning of the Pacific War. The number of E9M aircraft built, to which the Allies assigned the code designation "Slim", amounted to 35 copies.

Characteristics of E9MU: crew - 2 people, power plant - 1 300 HP Hitachi engine. With. (224 kW), wingspan - 10.0 m and wing area - 22.1 m², aircraft length - 7.64 m, height - 3.29 m, empty weight - 847 kg, take-off weight - 1210 kg, maximum

speed — 233 km/h, cruising speed — 148 km/h, time to climb 3000 m — 9.6 min, service ceiling — 6740 m, armament — one 7.7 mm machine gun.

£7M

In June 1944, work began on the J7W Sinden (Bright Lightning) fighter-interceptor on assignment from the Navy. Since the firm had no experience in designing high-speed aircraft, they were given a group of employees of the BO Naval Arsenal I, headed by Captain Tsuruno, to help her. The aircraft, made according to the "duck" scheme, was equipped with a Mitsubishi Na-43 engine, installed behind the cockpit and driving the pusher propeller through an elongated shaft. Air for cooling the engine came through two narrow air intakes located on the sides of the fuselage.

An order for serial production of the interceptor was placed with Kyushu and Nakajima even before the first flight of the J7W1 aircraft. The expected rate of production was

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150 machines per month, however, in the conditions of constant bombing, by the summer of 1945 only one experimental aircraft was produced. The first flight of an experimental aircraft under the control of Captain Tsuruno took place on August 3, 1945. Before the surrender of Japan, only the second experimental aircraft was produced, which they did not have time to fly around. After the end of the war, this car was sent for study in the United States. Plans to create a jet version of the J2W2 aircraft, equipped with a He-130 engine with a thrust of 900 kgf, were not implemented.

Characteristics of J7W1: crew - 1 man, power plant — 1 Na-43 engine with a capacity of 2130 liters. With. (1588 kW), wingspan - 11.1 m and its area - 20.5 m², aircraft length - 9.66 m, height - 3.92 m, empty weight - 3645 kg, maximum takeoff weight - 5228 kg, maximum speed - 750 km / h at an altitude of 8700 m, cruising speed - 420 km / h at an altitude of 4000 m, range - 850 km, time to climb 8000 m - 10.7 min, service ceiling - 12,000 m, armament - four 30-mm guns. |

KOW /Ki-86

In 1939, the fleet purchased 12 Vi 131B aircraft from the German company Bücker, intended for initial flight training. In Japan, they were used in flight schools under the designation KXBul (initial training aircraft of the marine experimental type Vee).

In August 1942, Watanabe began licensed production of the Bu 131 aircraft under the designation KUMJ "Momiji" (initial training aircraft marine type 2 model 11). The aircraft was equipped with a Hitachi GK4A Hatsukaze - 11 engine. Soon the army became interested in this aircraft and ordered it under the designation Ki-86 from Nippon. Deliveries for the army of serial machines under the designation Ki-8ba (initial training aircraft army type 4 model A), equipped with an HbIX engine "Hitachi" Na-47, began in 1944. In February 1945, an all-wood version of the army aircraft Ki- 865. A total of 339 KUM cars were produced! (code designation "Surge") and 1037 Ki-86 vehicles.

Characteristics of KIWI: crew - 2 people, power yC-setting - 1 engine "Hatsukaze" -11 with a capacity of 110 liters. With.

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(82 kW), wing span - 7.34 m and its area - 14.2 m, aircraft length - 6.62 m, height - 2.64 m, empty weight - 409 kg, takeoff weight - 639 kg, maximum speed - 180 km / h, cruising speed - 120 km / h at an altitude of 1000 m, range - 600 km, climb time 3000 m - 13 minutes, service ceiling - 3880 m.

CTOM/

In 1937, the Japanese purchased two MA 16 training aircraft from the American company North American. They were tested in the fleet under the designation "experimental transitional training aircraft of marine type A". Based on the test results, it was decided to organize the production of the aircraft at the Watanabe company after appropriate revision.

At the end of 1941, preparations began for serial production of a training aircraft. The aircraft, which received the designation K10UU1 (transitional training aircraft marine type 2 model 11), featured a new keel and the installation of the Nakajima Kotobuki-2 engine. After manufacturing 26 aircraft by November 1942, Watanabe transferred all equipment and drawings to Nippon Hikoki KK, which from February 1943 to March 1944 produced another 150 aircraft. The aircraft received the code name "Oak" from the Allies.

Characteristics of K10W1: crew - 2 people, power plant - 1 engine "Kotobuki" -2 with a power of 600 liters. With. (447 kW), wing span - 12.36 m, its area - 22.3 m², aircraft length - 8.84 m, height - 2.84 m, empty weight - 1476 kg, maximum takeoff weight - 2093 kg, maximum speed - 280 km / h at an altitude of 2080 m, cruising speed - 220 km / h at an altitude of 1000 m, range - 1060 km, climb time of 5000 m - 17.2 min, service ceiling - 7300 m, armament - one 7.7 mm machine gun.

KTTW

At the end of 1940, the fleet gave the task to develop the KLU training aircraft, designed to train members of the bomber crews. The first prototype aircraft

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powered by a Hitachi GK2B Amakaze-21 engine, took off in November 1942. In the summer of 1943, the aircraft was put into service under the designation K11W1 Shiragiku (White Chrysanthemum) (combat training aircraft type 3 model 11). Soon a solid wood version of the K11W2 was produced in small numbers. These aircraft were mainly used as transport and anti-submarine aircraft. A total of 798 K11Ws were built, at the end of the WAR they were used as suicide attack aircraft with a suspended 250 kg bomb. Characteristics of KPM1: crew - 5 people, power plant - 1 engine "Amakaze" -21 with a capacity of 515 liters. With. (384 kW), wing span - 14.98 m, its area - 30.5 m², aircraft length - 10.24 m, height - 3.93 m, empty weight - 1677 kg, maximum take-off weight - 2800 kg, maximum speed - 230 km/h at an altitude of 1700 m, cruising speed - 175 km/h at an altitude of 1000 m, range - 1760 km, time to climb 3000 m - 19.6 min, service ceiling - 5620 m, armament - one 7.7 mm machine gun and two 30 kg bombs.

QIW

In 1942, the fleet gave Watanabe the task of Ha-carrier anti-submarine aircraft. The machine was equipped with two Hitachi GK2C Amakaze-31 engines, a Type 3 radar and a magnetometer in the rear fuselage.

The first prototype of the aircraft OTM "Tokai" ("East Sea") took off in September 1943. After successful flight tests, it was put into mass production in the spring of 1944 under the designation QIWI (sea patrol aircraft type 4 model 11). Until the end of the war, 153 copies of the O1UU1 (Allied code designation "Lorna") were produced. In small quantities: the O1U / 2 variant was produced with a wooden tail section. One all-wood aircraft OTUU1-K was also produced for the training of radio operators.

Characteristics of O1M1: crew - 3 people, power YC-training - 2 Amakaze-31 engines with a capacity of 610 hp each. With. (455 kW), wingspan - 16.0 m, its area - 38.2 m²,

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aircraft length - 12.1 m, height - 4.1 m, empty weight - 3102 kg, maximum takeoff weight - 5318 kg, maximum CKO-speed - 320 km/h at an altitude of 1340 m, range - 1340 km, time climb 2000 m - 8.7 minutes, practical ceiling - 4490 m, armament - two 20-mm guns, one 7.7-mm machine gun and 500 kg of depth or conventional bombs.

"Mansu"

Ki-79

In 1942, the Manchurian company Manshu Hikoki Seizo began serial production of the Ki-79 training aircraft. Developed on the basis of the Nakajima Ki-27 fighter, the Ki-79 aircraft was produced in the Ki-79a single-seat modification with the Na-13a engine, the Ku-79b double modification and the Ki-79s single-seat modification with the more powerful Na-23 engine.

Characteristics of the Ki-79a: crew - 1 man, power plant — 1 engine "Hitachi" Na-13a with a capacity of 510 liters. With. (380 kW), wingspan - 11.5 m, aircraft length - 7.8 m, empty weight - 1300 kg, maximum speed - 340 km/h, range - 920 km, armament - one 7.7 mm machine gun type 89.

Mitsubishi

Mitsubishi at the end of the 19th century engaged in shipbuilding and shipping. At the beginning of 1916, the company at its plant in Oyomachi (Nagoya) launched the production of Renault aircraft engines with a capacity of 70 hp. s., and next year began licensed production of the Hispano-Suiza engine. Mitsubishi showed interest in the aircraft industry in 1918, when the company sent Dr. Kumezo Ito to France to study the specifics of aircraft production. In May 1920, a new branch of Mitsubishi Nainenki Seizo was organized.

By order of the army, Mitsubishi built the Ko-1 training aircraft, and later the Ki-1, the prototype for which was the Nieuport-81 aircraft. The development of shipborne aircraft

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At the time, the basing was carried out by a team led by the English designer Herbert Smith, who had previously worked for the English firm Sopwith. After Toro, as Mitsubishi, established itself as an aircraft manufacturer, all projects were influenced by the British aircraft industry for a long time.

In May 1928, the firm was renamed Mitsubishi Kokuki (Mitsubishi Aircraft Company) and established a branch office in Tokyo called Tokyo Kikai Seisakuso (Goki Machine Building Plant). The continued growth in the production of ships, aircraft engines and aircraft led to the reorganization of the company in 1934 under the new name Mitsubishi Yukogyo (Mitsubishi Heavy Industries Company). By 1938, Mitsubishi had become one of the leading aircraft manufacturers in Japan. For the period 1935--1940. Mitsubishi continued to increase the production of aircraft and engines, for this it was necessary to fill a dam in the harbor of Haron and build new production buildings for the aircraft factory on it.

In order to keep the import of technological equipment to a minimum, in January 1939 Mitsubishi opened a plant in Hiroshima that specialized in the production of its own machine tools for mechanical engineering. Japanese government in the 1930s kept secret information about the development of the aircraft industry in the country and limited the Japanese press in matters of coverage of the production activities of Mitsubishi. By 1940, Mitsubishi included 6 aircraft and 11 engine factories located in various regions of Japan.

The company produced about 23% of the total number of aircraft built in Japan during the Second World War, it was also the largest manufacturer of engines, releasing 38%

all Japanese aircraft engines.

FIM

Development of the E1M reconnaissance seaplane, equipped with a Hikari-1 engine with a capacity of 820 hp. s., began in 1934. The first flight of a prototype took place in June 1936, during testing its insufficient

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stability on the water and some problems with control in flight. The revised version, designated E1M2 (reconnaissance seaplane marine type 0 model 11) and equipped with a more powerful Mitsubishi Zuisei-13 engine, satisfied the developers in all respects. A training version of the aircraft was also developed under the designation E1M2-K.

Serial production of the aircraft began in 1938, with a total of 524 aircraft built by the company. Then the production of the aircraft was transferred to the 21st Naval Aviation Arsenal in Sasebo, where 590 more examples were subsequently built. These machines were equipped not only with all battleships and cruisers of the Japanese Navy, but also with small ships of the K-Mapy class (displacement 6900 tons) and S-Maruk (displacement 8300 tons), which were converted merchant ships. The code name "Pete" was assigned to FIM2 during the Battle of Midway, when the Allies first saw two reconnaissance aircraft take off from the battleship Kirishima. The giant battleships Musashi and Yamato carried several scouts each.

E1M2 seaplanes were widely used during the Pacific War, accompanying each Japanese amphibious landing, providing artillery fire correction from support ships, and also covering the landing troops from attacks by allied fighters and dive bombers. In the middle of the war, they escorted Japanese convoys, and at the end of the war they were even used as air defense fighters of the Japanese islands. There is a known case when the seaplane E1 M2 was rammed by an American B-17 bomber, and the Japanese crew (K. Katsuki and T. Furukawa) survived and were awarded by the Japanese command. This ramming took place on October 4, 1942.

Characteristics of FIM2: crew - 2 people, power plant - 1 engine "Zuisei" -13 with a power of 875 HP. (652 kW), wing span - 11.0 m and its area - 29.54 m², aircraft length - 9.5 m, height - 4.0 m, empty weight - 1928 kg, takeoff weight - 2550 kg, maximum speed - 370 km/h at an altitude of 3440 m, range - 740 km, time to climb 5000 m - 5.6 min, service ceiling - 9440 m, armament - two 7.7-MM type 97 machine guns in the nose, one 7.7 mm machine gun type 92 in the rear of the cockpit and two 60 kg bombs under the wing.

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A5M

A prototype carrier-based ASM fighter, equipped with a Nakajima Kotobuki-5 engine with an HP 550 power. s., first took off on February 4, 1935. After the successful completion of military tests, the aircraft was put into service under the designation A5M1 (carrier-based fighter type 96 model 11) with the Nakajima engine Kotobuki-2 Kan | 580 hp s., he began to enter the fleet at the beginning of 1937.

In July 1937, a variant of the A5 Mda aircraft with the Kotobuki-2 Kai ZA engine began to roll off the assembly line. These Camo-lets entered service with the 12th and 13th Kokutai, who fought in China. With the expansion of hostilities in China, the development of new variants of the fighter has accelerated sharply. The ASM2b variant (model 22) appeared with a Kotobuki-3 engine with a capacity of 640 hp. c., then A5 MZA with a 610 hp Hispano-Suiza engine. With. and 20mm cannon. The latest variant was the A5M4 (model 42) with an additional 160 liter fuel tank. A total of 1,095 ASMs (Allied code "Claude") were produced.

At the beginning of the Pacific Wars, ASM4 fighters were in service with the Ryuyo, Zuiho, and Hosho aircraft carriers. They took part in the raid on Davao, covering the Japanese bombers, but then they were used exclusively in training and spare parts. A training version of the aircraft was also developed under the designation A5 M4-K. A few surviving A5 M4 fighters were used for suicide attacks at the end of the war.

Characteristics of A5M4: crew - 1 person, power plant - 1 engine "Kotobuki" -41 with a power of 785 HP. (585 kW), wingspan - 11.0 m, wing area - 17.8 m², length on the aircraft - 7.57 m, height - 3.27 m, empty weight - 1216 kg, take-off weight - 1671 kg, maximum speed - 430 km/h at an altitude of 3000 m, range - 1200 km, time to climb 5000 m - 8.5 min, service ceiling - 9800 m, armament - two 7.7-mm machine guns type 89 and two 30 kg bomb.

ABM

In 1937, under the leadership of Jiro Honkoshi, to replace the outdated ASM, the development of the carrier-based fighter ABM "Reizen" (short for "Reishiki zentoki" - "is

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consumer zero"). A prototype under the designation A6M1, equipped with a Zuisui-13 engine with an HP 780 power. with., made its first flight | April 1939. During the tests, the aircraft demonstrated flight characteristics that corresponded to the technical requirements, with the exception of the maximum speed. As a result, the third experimental aircraft, which became the prototype of the A6M2 version, was equipped with a more powerful Nakajima Sakae-12 engine with an output of 950 hp. With. This machine, flown on December 28, 1939, showed better flight performance than expected.

The first 15 A6M2 production vehicles (type 0 model 22 carrier-based fighter) were sent in July 1940 to the 12th mixed kokutai for military trials in China. Having first entered combat on September 13, the A6M2 fighters scored about 100 victories during the year of participation in hostilities, with their own losses of two fighters. At the beginning of the Pacific War, the Japanese fleet was armed with 328 Ab M2 fighters. They participated in two major fleet operations - raids on Pearl Harbor and the Philippines.

Modification of a fighter with a Sakae-21 engine with a power of 1130 hp. With. received the designation A6M3 (model 32). Combat units with A6M3 operated in the area of New Guinea, in the Coral Sea and at Midway. However, they suffered heavy losses from allied P-38, E40-1 and Spitfire fighters.

Another modification with a turbocharger for the Sakae engine was designated A6M4. However, the A6M5 version (deck nc consumer type 0 model 52) was produced in the largest quantity, which entered service in the fall of 1943. In March of the following year, the AbM5a variant went into production, followed by the AbM5b, and from September the A6M 5s. . The Allies gave the A6M the code designation "Zeke", but very often another designation was used that corresponded to the Japanese designation of the aircraft - "Zero" ("Zero").

Soon, the Japanese began to use the ABM, equipped with a 250-kg bomb, to carry out suicidal attacks, on October 14, 1944, the USS Arizona was damaged by such an aircraft. Rear Admiral M. Arima was among those who first took it upon themselves to master the tactics of suicide attacks. On

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On October 16, 1944, in his A6M aircraft, which had only one way fuel supply, he attacked the American aircraft carrier Franklin and died in the process.

Between 23 and 26 October, Japanese squadrons attacked near Leyte a formation of Allied ships consisting of 7 aircraft carriers and 40 escort ships. Among the Japanese pilots were 55 suicide pilots, this operation was the first in world history to use the tactics of mass suicide attacks. On October 24, A6M fighters were spotted by the American aircraft carrier USS Saint Lo. At 10.49 Lieutenant Yu. Seki, who was in charge of the five kamikazes, gave a prearranged signal to start the attack with a roll of his plane and threw the plane down. Two minutes later, howler monkeys began to work on the aircraft carrier, announcing the Japanese raid, and anti-aircraft guns opened fire. Only one Japanese aircraft managed to break through to the target, which came out of a dive at a distance of about a thousand meters and then headed for an aircraft carrier at an altitude of about thirty meters, as if the pilot intended to land on an aircraft carrier. The aircraft carrier's anti-aircraft guns fired at the aircraft, but without any result. At 10.52 the plane dropped a bomb on the flight deck, rolled over, hit the deck and exploded near the port side. The remains of the aircraft rolled, rotating, along the flight deck to the very bow of the ship, the fuel that spilled over the deck during the crash of the aircraft flared up. At the same time, a bomb exploded, which, when falling, broke through the deck and got stuck in the hangar. The explosion of a kamikaze plane bomb caused a fire followed by explosions of ammunition on the aircraft carrier, after which the ship sank. Killed 114 and wounded more than 300 people from the crew of the aircraft carrier. During the period of October 23-26, the Japanese sank five Allied ships, and damaged 35 ships (of which 23 ships were heavily damaged).

The increased frequency of allied bomber raids forced the Japanese to begin regular use of air ramming, often for these purposes the ABM fighter was used. One of the first Japanese pilots to use this technique regularly was Lieutenant Masajiro Kawato. He made his first ram in 1943 over Rabaul. Having fired all the ammunition in battle, he sent his car from below into an American B-25 bomber, having managed to
moment

11 M. and V. Kozyrev | 321

to jump out before impact Ha parachute. In the same year, on November 11, having flown in to intercept American bombers, he made a second ramming, but he himself was wounded. On December 17, Cavato attacked the P-39 fighter. As a result of his frontal attack, the planes exploded, and the Japanese pilot again escaped using a parachute. Kawato had long nurtured the idea of ramming the B-24 aircraft. Finally, on February 6, 1944, over Rabaul, he managed to ram the tail of the bomber, destroying it, and he himself escaped safely by parachute. Kavato became the second pilot in the world after the Hero of the Soviet Union, Lieutenant B.I. Kovzan, who made four rams.

Before the end of the war, two more versions were built: the A6M6 fighter with the Sakae-31 engine and the A6M7 dive bomber. The total number of produced ABMs of all versions was 10,937 copies (of which 3,879 were built by Mitsubishi, and the rest by Nakajima). The best pilot of the Japanese Navy, H. Nishizawa, nicknamed the Devil of Rabaul during the war, scored 87 air victories in various modifications of the A6M fighter. So, for example, in an air battle over Guadalcanal on November 2, 1942, he shot down six E4E Wildcat aircraft, and on October 25, 1944, escorting five kamikaze aircraft, H. Nishizawa shot down two F6F Hellcat fighters. , taking off from an American aircraft carrier to intercept Japanese
aircraft.

Characteristics of A6MS5b: crew - 1 person, power plant - | Sakae-21 engine with a capacity of 1100 liters. With. (820 kW), wing span - 11.0 m and its area - 21.3 m², aircraft length - 9.12 m, height - 3.51 m, empty weight - 1876 kg, takeoff weight - 2733 kg, maximum speed - 565 km/h at an altitude of 6000 m, range - 1143 km, time to climb 6000 m - 7.0 min, service ceiling - 11,740 m, armament - one 7.7-mm machine gun type 97, one 13.2 mm Type 3 machine gun, two 20 mm Type 99 cannons and two 60 kg bombs.

A7M |

The development of the A7M Penny (Hurricane) carrier-based fighter began in April 1942. The first experimental A7M1 aircraft with the Homare-22 engine flew in May 1944. As a result

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During the tests, unsatisfactory characteristics of the machine were revealed. The sixth experimental machine was finalized and the MKOA engine was installed on it, it became the prototype of the A7M2 series. The first flight of the A7M2 aircraft (carrier-based fighter type 2 model 22) took place on October 13, 1944, after which it was decided to begin preparations for serial production of the aircraft. By the end of the wars, only three more aircraft of the pilot batch and the only production aircraft A7M (Allied code designation "Sat") managed to fly around.

In parallel, the development of a coastal version of the aircraft under the designation A7M3-J, equipped with an MK9A engine with a turbocharger, was underway. The main emphasis in this version was placed on increasing the rate of climb and achieving maximum speed at high altitudes. The development of the A7M3-J was completed in November 1944, the layout was accepted by the fleet in February 1945. The construction of the experimental aircraft was planned to be completed in October 1945, but work on the aircraft was stopped with the surrender of Japan.

Characteristics of A7M2: crew - 1 man, power plant — 1 MKUA engine with a capacity of 2200 hp. With. (1641 kW), wingspan - 14.0 m and its area - 30.86 m², aircraft length - 11.0 m, height - 4.28 m, empty weight - 3226 kg, takeoff weight - 4720 kg, maximum speed - 620 km/h at an altitude of 6600 m, cruising speed - 410 km/h at an altitude of 4000 m, time to climb 6000 m - 6.1 min, flight duration - 3 h, service ceiling - 10 900 m, armament - four 20-mm guns type 99 and two 250-kg bombs.

VM

The B5M carrier-based bomber was a competitor to the Nakajima BSN aircraft. Compared to the BSN, it was a more conservative design: it had a non-retractable landing gear with large wheel fairings, the wing panels were manually folded in the parking lot, and the engine propeller pitch was changed before flight.

In 1937, the aircraft was put into production under the designation B5MI (carrier bomber torpedo bomber type 97 model 11). However, after the construction of 125 B5M1 instances, the BSN began to enter service, which soon became the main

Qing 323

the howl of carrier-based torpedo-carrying aircraft. Serial production of the Mitsubishi aircraft was discontinued, and the already produced aircraft were transferred to coastal aviation units. As part of these units, they participated in the battles in Southeast Asia, later they were handed over to training units. The B5M bomber received the code name Mabel from the Allies.

Characteristics of BSM1: crew - 3 people, power yC-setting - 1 engine "Mitsubishi" "Kinsey" -43 with a capacity of 1000 liters. With. (746 kW), wingspan - 15.3 m and its area - 37.95 m², aircraft length - 10.23 m, height - 4.24 m, take-off Bec - 4000 kg, maximum speed - 380 km /h, range - 2200 km, practical ceiling - 8260 m, armament - one 7.7-mm machine gun and 800 kg of bombs or 1 torpedo.

sms

In April 1934, a prototype aircraft made its first flight, which was later to be used as a medium bomber and torpedo bomber. After the completion of flight tests in June 1936, serial production of the aircraft began under the designation SZMI (bomber marine type 96 model 11). Aircraft of the initial

versions, of which 34 examples were built, were equipped with a Kinsei engine with a power of 910 hp. With. and had a maximum speed of 360 km/h at an altitude of 1975 m.

As soon as the production of improved Kinsei-41 and 42 engines was launched in 1937, the main version of the G3M2 was launched into the series. The aircraft's maximum speed increased to 374 km/h, it carried a bomb load of up to 800 kg, and was armed with three 7.7 mm machine guns. During 1941 - 1943. the company produced an improved version of the G3M3 with a 1300 hp Kinsei engine. with., allowing to develop a maximum speed of 415 km / h. |

For the first time, G3M2 aircraft took part in combat operations as part of the Kanoya kokutai in August 1937 in China. By 1940, Japan's four Kokuta Naval Air Forces had approximately 130 G3M2s in their fleet, the number of bombers had grown to 204 by the time of the attack on Pearl Harbor. In December 1941, 60 G3M2 machines from the Genzan and Mihoro kokutais, along with 26 G4M1 machines from the koku

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The Kanoya, having taken off from its bases in Indochina, discovered and sank the British warships Prince of Wales and Repulse during their passage near the coast of Malaya.

A total of 636 vehicles were produced during the war years (the code designation of the allies was "Nell"). Some OZM! was converted into transport or passenger aircraft for use on Japanese airlines, as well as into record-breaking aircraft. So, for example, an airplane G3M with tail number J-BACI in late summer - early autumn 1939 circled the globe, flying for 194 flight hours a distance of about 60,000 km.

Characteristics of OZM2: crew — 7 people, power plant — 2 Kinsey-45 engines with a power of 1075 hp. With. (802 kW), wing span - 25.0 m and its area - 75.0 m, aircraft length - 16.45 m, height - 3.69 m, empty weight - 4965 kg, takeoff weight - 8010 kg, maximum speed - 374 km / h at an altitude of 4200 m, range - 4380 km, climb time of 3000 m - 8.34 min, service ceiling - 9130 m, armament - one 20-mm cannon type 99, five 7.7- mm type 92 machine guns and one 800 kg torpedo or up to 800 kg bombs.

G4M

Designed in accordance with the technical requirements of 1937, a medium bomber The G4M made its first flight on October 23, 1939. During the tests, a maximum speed of 444 km/h and a range of about 5500 km (without bomb load) were achieved.

The first two pre-series G4M1s (sea-type bomber | model 11), equipped with Kasei-11 engines with a power of 1340 hp each. s., were delivered in January 1941, and in April the delivery of production vehicles began. Initially, O4M bombers were used in China in the summer of 1941, but they were soon transferred to Indochina. In December of the same year, they, together with C3M2 bombers, sank the warships Prince of Wales and Repulse. The Allies codenamed the G4M bomber "Betty".

It must be said that with the participation of G4M1 on February 1, 1942, npo- erupted the first suicidal attack in the Pacific

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war. On that day, seven G4M1 bombers attacked the American aircraft carrier Enterprise, but by the combined efforts of anti-aircraft artillery and aircraft carrier escort fighters, all Japanese aircraft were shot down. However, one of the bombers managed to still reach the aircraft carrier and fell on it, damaging the deck.

The experience of the very first months of the war showed that the unprotected fuel tanks of the G4M I aircraft were very vulnerable in combat. It was for this reason that on April 18, 1943, Admiral Yamamoto and

his headquarters flying on two G4M1 bombers attacked by R-38 fighters. The modified version of the CAMI model 12 received sealed tanks and a system for pressurizing the tanks with exhaust gases from the engine exhaust. In addition, new Kasei-15 engines were delivered, which allowed the aircraft to fly higher to avoid the possibility of damage from light air defense systems.

The new version of the G4M2 model 22 received enhanced armament, increased fuel capacity and Kasei-21 engines. This version remained in production until the end of the war, in addition to the G4M2A, G4M2B, G4M2C and G4M2D modifications. With the advent of the MXY7 Oka kamikaze aircraft, the G4M2 bomber was chosen as its carrier. The design of the carrier, which received the designation O4M2E, was improved: doors were removed from the bomb bay, holders were installed for mounting the Oka in a semi-recessed position under the fuselage of the carrier. On March 21, 1945, 35 G4M2E bombers carrying Oka projectiles made an attempt to break through to the American carrier formation approaching Kyushu. However, they were intercepted by American Hellcats and the attack failed. The Japanese attempted a suicide attack on April 12, when the G4M2E managed to deliver the Oka to the target, causing severe damage to the Stanley destroyer. By the end of the war, the production of the O4 MZ model 34 version with reinforced cockpit armor began. In total, during the war years, 1200 copies of SAMI, 1154 G4M2 and 60 G4M3 were produced.

Characteristics of G4M2: crew - 7 people, power plant - 2 Kasei-21 engines with a capacity of 1800 hp. With. (1342 kW), wingspan - 25.0 m and its area - 78, 13 m², aircraft length - 20.0 m, height - 6 m, empty weight - 8160 kg,

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take-off weight - 12,500 kg, maximum speed - 438 km/h at an altitude of 4600 m, range - 6059 km, time to climb 8000 m - 32.4 min, service ceiling - 8950 m, armament - two 20- mm Type 99 mm guns, four 7.7 mm Type 92 machine guns and one 800 kg torpedo or up to 1000 kg of bombs.

J2M

Although the requirements for the fighter-interceptor were developed as early as 1939, the prototype of the J2M Raiden (Thunder) fighter first took off on March 20, 1942. According to the test results, the fourth prototype had to be significantly modified, while the unreliable Kasei-13 engine was replaced by the Kasei-23a engine with a water-alcohol mixture injection system.

The production of fighters under the designation 12M2 (fighter-interceptor marine type 2 model 22) began in October 1942, however, due to problems with the development of the engine and the priority of the production of the A6M carrier-based fighter, only 14 aircraft were produced in the first six months of production, including three prototype J2M1 aircraft. In the summer of 1943, production was interrupted until the causes of accidents with two aircraft were clarified. After completion, deliveries of Raidens began to the 381st Kokutai.

Next, a modification of the 12 MZ began to be produced with a reinforced wing for the installation of four 20-mm guns and the Kasei-23a engine. The J2M4 high-altitude interceptor variant was equipped with a turbocharger for the Kasei-23c engine. The fuselage additionally placed two more 20-mm guns mounted at an angle to the horizon. The second high-altitude version was the J2M5, which had an improved visibility lantern and was equipped with a more powerful Kasei-26a MK4U-A engine. The J2M interceptors, codenamed "Jack" by the Allies, were in service with the 302, 332, 352, and 381st Kokutais, as well as the Genzan and Gainan Kokutais. A total of 476 J2M aircraft of all modifications were built.

Characteristics of J2M3 "Raiden": crew - 1 man, power plant - 1 engine "Kasei" -23a with a capacity of 1800 liters. With. (1342 kW), wingspan - 10.8 m and its area - 20.05 m², aircraft length - 9.95 m, height - 3.95 m,

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Toro - 2460 kg, take-off weight - 3435 kg, maximum speed - 588 km / h at an altitude of 5300 m, range - 925 km, time to climb 10,000 m - 19.5 min, service ceiling - 11,700 m, armament - four 20-mm guns type 99.

J8M/Ku-200

In 1944, Japan bought from Germany Ha licenses for the production of the Me 163B aircraft and the NUK 509A engine for it, after which the Mitsubishi company received an assignment to develop a missile interceptor for the army and navy. The design of the aircraft was carried out urgently under the leadership of Mijiro Gakahashi, and already in September a prototype was made. To assess the controllability of the future interceptor, a glider was developed at the I Naval Arsenal in Yokosuka MXY8 "Akigusa" ("Autumn Grass"), which on December 8, 1944 first took to the air in tow. At the Aviation Institute of the Fleet in Maeda, about 60 MHUV (Ki-13) gliders were built, designed to train combat pilots. It was also planned to release a training glider MXU9 "Syuka" ("Autumn Fire") with a compression engine with a thrust of 200 kgf, but they did not manage to build it before the end of the war.

In early January 1945, an unpowered sample of the missile interceptor was lifted into the air in tow behind the B6N1 aircraft. The aircraft had the naval designation 彗 "Shusui" ("Sharp Sword") (experimental naval missile interceptor) and the army designation Ki-200 "Syusui" (experimental army missile interceptor). It first took off on its own on July 7, 1945, but almost immediately after the aircraft took off from the ground, the engine failed, the aircraft crashed, and test pilot Goehiko I Nuzuka died. I had to urgently redo the fuel system on the sixth and seventh experimental aircraft. At the same time, mass production of the interceptor was being prepared at the Mitsubishi, Nissan, and Fuji firms; increased fuel capacity, Ki-200 and Ki-202 with one 30-mm gun Ho-105. However, all work was interrupted with the end of the war.

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Characteristics of J8M1/Ku-200: crew - 1 person, power plant — one LRE "Toko" Ro.2 with a thrust of 1500 kgf, wingspan — 9.5 m and its area — 17.73 m², aircraft length — 6.05 m, height — 2.7 m, empty weight - 1505 kg, take-off weight - 3885 kg, maximum speed - 900 km / h at an altitude of 10,000 m, time to climb 10,000 m - 3.5 min, service ceiling - 12,000 m, engine operation time - 5.5 minutes, armament - two 30-mm type 5 cannons in the wing.

K3M

In May 1930, the first prototype training aircraft was built under the naval designation K3M 1. After testing and some refinement, the aircraft was launched into a series under the designation KZM2 (training aircraft marine type 90 model 11). The aircraft was equipped with an Amakaze-11 engine with a power of 340 hp. C., was produced at the factories of Mitsubishi and Aichi.

In December 1933, a military version of the aircraft appeared under the designation Ki-7, equipped with a more powerful engine. The test results of two prototypes were inconclusive, because the first car crashed, so the army lost interest in the aircraft. The second experimental car was converted into a passenger aircraft for the Tokyo Koku KK company. The aircraft was given the designation M\$-1 (civil transport aircraft), it was equipped with a 420 hp Jupiter VI engine. With. and interchangeable landing gear (float or wheeled).

Since 1939, the naval version of the aircraft was produced by Watanabe under the designation KZMZ (training aircraft marine type 90 model 32). This version of the aircraft was equipped with the Nakajima Kotobuki-2 engine, and the keel was of an increased area similar to the civilian version. During World War II, K3M2 and KZMZ aircraft were widely used for

pilot training. In addition, a small number of aircraft were converted into the K3M3-L transport version, which could carry 4-5 passengers. A total of 624 KZM vehicles of various modifications were built (the code designation of the allies was "Ripe").

Characteristics of K3M3: crew - 4 people, power plant - 1 engine "Kotobuki" -2 with a capacity of 580 liters. With.

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(433 kW), wing span - 15.78 m and its area - 34.5 m², aircraft length - 9.54 m, height - 3.82 m, empty weight - 1360 kg, takeoff weight - 2200 kg, maximum speed - 230 km/h at an altitude of 1000 m, range - 790 km, time to climb 5000 m - 9.5 min, service ceiling - 6390 m, armament - one 7.7-mm machine gun and four 30-kg bombs.

Ki-1

The Ki-1 bomber, which was a monoplane with a non-retractable landing gear and spaced tail, entered service with the army in 1939, where it was used for bombing training. It was produced in two versions - Ki-1-I with Na-2-P engines and Ki-1-P with Na-2-PI engines. In 1941-1942. used as a transport aircraft. The total number of Ki-1 amounted to 118 copies.

Characteristics of the Ki-1-G: crew - 4 people, power plant - 2 Na-2-11 engines with a capacity of 944 hp each. With. (704 kW), wing span - 26.5 m and its area - 90.74 m², aircraft length - 14.8 m, take-off weight - 8100 kg, maximum speed - 220 km/h, range - 1100 km, armament — three 7.7 mm machine guns and 1000 kg of bombs.

Ki-15

In July 1935, the army issued a task to develop a reconnaissance aircraft, after which the development of the Ki-15 aircraft began at Mitsubishi. The first flight of the prototype took place in May 1936, during flight tests the aircraft showed good flight characteristics and reached a speed of 481 km/h at an altitude of 4050 m. Based on the test results, Mitsubishi ordered serial production of the aircraft under the designation Ki-15 -1 (reconnaissance Ca-plane army type 97 model 1).

The second prototype of the aircraft, which received the civil designation "Karigane"-1 ("Wild Goose") and the registration number J-BAAI, made an ultra-long flight from Japan to England on April 8-9, 1937. The aircraft covered a distance of 15,315 km in 94 hours and 17 minutes, of which

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flight time was 51 hours 17 minutes. In May 1937, the abandonment of production vehicles to the troops began.

At the very beginning of the war with China, the Ki-15-1 aircraft, equipped with the Na-8 engine, operated quite successfully. However, with the advent of the Soviet I-16 fighters among the Chinese, it was decided to modify the reconnaissance aircraft by installing the Na-26-1 engine on it. This version entered the army aviation in September 1939 under the designation Ki-15-P. In 1938, the fleet, interested in this aircraft, ordered 20 aircraft under the designation C5M | (scout marine type 98 model 1). The fleet subsequently purchased another 30 S5M2 machines, which differed only in the installation of a new Sakae-12 engine with a power of 950 hp. With. By the end of production, almost 500 machines of all versions had been built.

With the outbreak of the Pacific War, the Japanese army and navy used the Ki-15-P and S5M2 in Southeast Asia. The reconnaissance aircraft, which was assigned the code designation "Babs" by the Allies, was used for another year, but then was withdrawn from the combat units and transferred to the second line units. Many surviving aircraft were used for suicide attacks at the end of the war.

Characteristics of the Ki-15-[: crew - 2 people, power plant - 1 Na-8 engine with a capacity of 477 liters. With. (357 kW), wingspan - 12.0 m and its area - 20.36 m², aircraft length - 8.7 m, height - 3.35 m, empty weight - 1400 kg, take-off weight - 2300 kg, maximum speed - 480 km / h at an altitude of 4000 m, cruising speed - 320 km / h at an altitude of 5000 m, range - 2400 km, service ceiling - 11,400 m, armament - one 7.7-mm machine gun.

Ki-21

The Ki-21 aircraft was developed under the direction of Nakata and Ozawa in accordance with the terms of reference of the army aviation headquarters. The first of the two built prototypes took off on December 18, 1936, the first serial version of the Ki-21-Ia (heavy bomber army type 97 model 1A) arrived at the end of 1939 in the 60th sentai, based in China. The fighting showed that the bomber had insufficient firepower and armor protection. By

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Following this, the Ki-21-15 and Ki-21-ys versions were produced, equipped with additional armor, an additional 7.7 mm machine gun, increased capacity fuel tanks and an enlarged bomb bay. As a power plant, Na-5 engines with a power of 850 hp were used.

With.

Bomber sentai, based in Japan, Kopee and Manchuria, by the beginning of the war received Ki-21-P vehicles with more powerful Mitsubishi Na-101 engines. - a stuffy group based on Gaivan flew out on a combat mission to the area of \u200b\u200babout. Luzon (Philippines). Ki-21 planes from the 12th, 60th and 98th Sentai of the 3rd Air Group, based in Indochina, were intended for the bombing of Thailand and Malaya. Escorted by Ki-27 and Ki-43 fighters, they defeated the airfields and naval bases of the British in Alor Star, Sungei Patani and Butterworth. In 1941-1942. The Ki-21 was widely used by the Japanese, but during the raid on Rangoon in December 1941 and January 1942, they suffered heavy losses. Soon, most of the Ki-21-[a, Ki-21-Pb and Ki-21-Shs aircraft were already in units of the second line or served as training bombers.

The remaining vehicles at the end of the war were used for special purposes. For example, on May 24, 1945, with the participation of 9 Ki-21-P converted into transport aircraft, a sabotage action was carried out against American bomber aircraft, which by that time had already been based in Okinawa. Each of the Ki-21-P planes carried a group of suicide paratroopers specially trained to destroy enemy aircraft at home airfields. Only one car managed to break through to the target and land on the Yentan airfield. Before the security of the American airfield managed to destroy the paratroopers, they managed to blow up 7 and damage 2 B-29 bombers, set fire to a warehouse with fuel and lubricants and undermine a large amount of ammunition. The total number of Ki-21 bombers built (Allied code designation "Sally") was 2,064.

Characteristics of the Ki-21-Pb: crew - 5 people, power plant - 2 Na-101 engines with a capacity of 1500 hp each. With. (1119 kW), wingspan - 22.5 m and its area - 69.6 m²,

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aircraft length - 16.0 m, height - 4.85 m, empty weight - 6070 kg, take-off weight - 10 610 kg, maximum speed - 486 km / h At an altitude of 4720 m, cruising speed - 380 km / h, range - 2700 km, climb time 6000 m - 13.11 min, service ceiling - 10000 m, armament - one 12.7-mm machine gun type |, five 7.7-mm machine guns type 92 and up to 1000 kg of bombs.

Ki-30

The prototype of the Ki-30 two-seat light bomber, which first took off on February 28, 1937, was equipped with a Mitsubishi Na-6 engine. Despite the good performance shown during aircraft testing, the second prototype was equipped with a more powerful Nakajima engine.

On-5. This vehicle exceeded the performance specified in the terms of reference in 1936, so the army immediately ordered the first batch of 16 vehicles. They were put to military trials in January 1938, and two months later the Ki-30 went into production.

The use of Ki-30 bombers (military type 98 light bomber) in China was quite successful, since during the raids they operated under the cover of Ki-27 fighters. The situation was the same at the very beginning of the Pacific War, when bombers escorted by fighters operated against the allies from bases in the Philippines. But as soon as the required flight ranges increased, and the bombers began to fly out on missions without fighter escort, the Ki-30 aircraft immediately began to suffer heavy losses, and soon the surviving aircraft were transferred to the second line units. Several machines were transferred to the Thai Air Force, they were used in January 1941 against French troops in Indochina. The total number of Ki-30 bombers built (the code designation of the Allies "App") at the time of the end of production in 1941 was 704 copies, at the end of the war some of the bombers were used for kamikaze attacks.

Characteristics of the Ki-30: crew - 2 people, power plant - | Na-6 engine with a capacity of 950 liters. With. (708 kW), wingspan - 14.55 m, its area - 30.58 m², length sa

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Moneta - 10.35 m, height - 3.65 m, empty weight - 2230 kg, takeoff weight - 3220 kg, maximum speed - 423 km/h at an altitude of 4000 m, cruising speed - 380 km/h, range - 1700 km, practical ceiling - 8570 m, armament - two 7.7-mm machine guns type 89 and up to 450 kg of bombs.

Ki-46

The prototype of the reconnaissance aircraft Ki-46 took off for the first time at the end of November 1939. According to the results of flight tests, it was put into serial production in 1940 under the designation Ki-46-1 "Sitya" (strategic reconnaissance army type 100 model 1) with Mitsubishi engines Na-26-1.

In March 1941, the first aircraft of the Ki-46-P version (strategic reconnaissance army type 100 model 2) began to roll off the assembly lines, equipped with more powerful Mitsubishi Na-102 engines with a turbocharger. In July 1941, Ki-46s of both versions were in service with the 50th, 51st, 70th, 74th and 76th separate squadrons in China.

At the beginning of the Pacific War, Ki-46 scouts kept under surveillance a vast region that included China, the Philippines, Thailand, Burma and India. At that time, Ki-46-Ps were rarely intercepted by allied fighters, which did not have sufficient speed and rate of climb. Part of the Ki-46-P aircraft was handed over by the army to the fleet, these aircraft operated over Northern Australia, flying from the island of Timor. The Allies gave the Ki-46 the code designation "Dinah".

In December 1942, tests of the Ki-46- version (strategic reconnaissance army type 100 model 3) with Mitsubishi Na-112-1 engines began, the flight range of these machines reached 4000 km. The Ki-46-Sh was produced in parallel with the Ki-46-ŷŷ until the production of the second version was completed in [944]. In early 1945, the production of the Ki-46-Sh was transferred to Toyama after an earthquake Stū destroyed the Mitsubishi plant in Nagoya.

In May 1944, at the Garnei aviation arsenal in Tachikawa, work began on converting the Ki-46-Sh reconnaissance aircraft into an interceptor fighter. Instead of photographic equipment and the front fuselage tank, two 20-mm No-5 cannons were installed, the cockpit was equipped according to the Ki-46-P type, and in the middle hour

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These fuselages installed a 37 mm No-203 cannon firing forward and upward at an angle of 30 °. The first aircraft, designated Ki-46-Sh Kan, was assembled in October 1944. In November of the same year, the new interceptors entered service with two sentais, five separate squadrons, and one training detachment. In March 1945, Mitsubishi began work on two more interceptor variants, but without a 37-mm gun. The Ki 46-Sha variant with obliquely mounted 20-mm No-5 guns did not have time to reach the production stage, and the Ki-46-SHh variant was built in several copies.

In February 1944, flight tests of four prototypes of the Ki-46-GUa high-altitude fighter began. However, due to the shortage of Na-112-PKi turbocompressor engines, this aircraft was not mass-produced. The total number of Ki-46 aircraft of all versions built was 1,742.

Characteristics of the Ki-46-P: crew - 2 people, power plant - 2 Na-102 engines with a capacity of 1080 liters each. With. (805 kW), wing span - 14.7 m and its area - 32.03 mg, aircraft length - 11.0 m, height - 3.88 m, empty weight - 3263 kg, maximum takeoff weight - 5800 kg, maximum - speed - 603 km/h at an altitude of 5800 m, cruising speed - 425 km/h at an altitude of 4000 m, range - 2478 km, time to climb 8000 m - 17.58 min, service ceiling - 10,720 m, armament - one 7.7-mm machine gun.

Ki-51

On the basis of the Ki-30 light bomber, the company developed the Ku-51 aircraft, intended for use as an attack aircraft or reconnaissance aircraft. As a power plant, the machine had a Mitsubishi Na-26-P engine with a power of 940 hp. With. In the summer of 1939, two prototypes were tested, after which a pre-production batch of 11 aircraft was built and tested by the end of the year. In the variant of the attack aircraft, the armor of the engines and cockpit was strengthened, in the variant of the reconnaissance aircraft (Ki-51a), a camera was installed in the rear part of the cockpit.

Initially, the Ki-51 (army type 99 attack aircraft) was used in combat operations in China, then, with the outbreak of the Pacific War, it was used against the allies. The experience of hostilities showed that the rather slow Ki-51

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often became an easy prey for Allied fighters when trying to attack aircraft carrier formations, but in some operations, especially where they had to take off from unsuitable sites, this aircraft supported its troops quite effectively. In the final stages of the war, the Ki-51 (code designation "5osha") with ONE 250 kg bomb under the fuselage was used for kamikaze attacks. During the war years, Mitsubishi built 1,459 Ki-51 aircraft, and another 913 aircraft were produced by the army aviation arsenal in Gachikawa.

Characteristics of the Ki-51: crew - 2 people, power plant - 1 engine Na-26-P with a capacity of 940 liters. With. (701 kW), wingspan - 12.1 m and its area - 24.0 m², aircraft length - 9.2 m, height - 2.73 m, empty weight - 1873 kg, take-off weight - 2920 kg, maximum speed - 425 km / h at an altitude of 3000 m, range - 1060 km, practical ceiling - 8270 m, armament - two 7.7-mm machine guns and up to 400 kg of bombs.

Ki-57

In 1939, the development of the army transport aircraft Ki-57 began, in parallel, the development of a civilian version under the designation MC-20 was carried out. The first experimental aircraft flew in August 1939, and by the end of the year both versions of the aircraft were put into production. In total, from 1940 to 1942, Mitsubishi built 101 production aircraft Ki 57-1 (military type 100 model 1 transport aircraft) and MS-20-I (Allied code designation "Topsy"). A small number of Ki 57-Is were transferred to the fleet, where they received the designation L4M1 (sea transport aircraft type 0 model

eleven). The aircraft was used to transport paratroopers, as well as as a communications and transport aircraft.

In May 1942, an improved version of the aircraft appeared with more powerful Mitsubishi Na-102 engines and with a modified composition of on-board equipment, designed to carry 15 people. In the civilian version, it had the designation MS-20-P, and in the military version, the Ki-57-P (military type 100 transport aircraft, model 2). A total of 406 machines of this modification were produced. After the war, captured MC-20s were used in China and the Soviet Union.

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Characteristics of the Ki-57-P: power plant - 2 Na-102 engines with a capacity of 1080 hp each. With. (805 kW), wing span - 22.6 m and its area - 70.08 m², aircraft length - 16.1 m, Bbl-cota - 4.77 m, empty Bec - 5585 kg, maximum takeoff Bec - 9120 kg, maximum speed - 470 km / h at an altitude of 5800 m, range - 3000 km, service ceiling - 8000 m.

Ki-67

The medium bomber Ki-67 "Hiryu" ("Flying Dragon") was developed to replace the Ki-21 and Ki-49 aircraft in accordance with the assignment issued to the company in November 1940. The aircraft, developed under the direction of Ozawa, was originally equipped with engines Mitsubishi Na-100. Three prototypes were completed between December 1942 and March 1943, the first flight took place on 27 December 1942. During the tests, the aircraft showed excellent maneuverability, without a bomb load, it could even perform some aerobatics.

Ki-67-1 bombers (heavy bomber army type 4 model I) were in service with the 7th, 14th, 16th, 61st, 62nd, 74th, 98th and 110th sentais and in the summer of 1944 took part in the hostilities in China, in northwestern New Guinea and Sumatra. After that, the Ki-67-1, which the Americans gave the name "Peggy", fought with the allies in the Philippines, near Iwo Jima, Saipan, Tinian and Okinawa.

Although the Ki-67-1 was originally intended for army aviation, the navy became interested in it. In early January 1943, the firm received an order to build 100 Ki-67 torpedo bombers capable of carrying standard 450 mm torpedoes. The first torpedo bombers entered service with the 762nd Kokutai in the autumn of 1944; these aircraft were especially active near Taiwan and in the Okinawa region.

At the end of the war, the bomber was used for suicide attacks, while all small arms were removed from the aircraft, and the crew was reduced to 3 people. In the first version, the aircraft, which received the designation Ki-67 Kai, carried two 800-kg bombs (one in the bomb bay, the other in the cockpit behind the pilot's seat) or a special 2900-kg charge with a fuse on a long rod placed forward. In the second variant, which was given the designation Ki-167,

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A thermite bomb "Cakyradan" weighing 2900 kg was installed directly behind the cabin. Since the bomb did not fit into the contours of the fuselage, i.e. K. it towered half a meter above the fuselage, it was covered with a fairing from above. The first samples of the Ki-167 were ready in February 1945, for the first time the Japanese used them on April 17 in the Okinawa region. Of the three vehicles that took off on a mission, two vehicles returned to base without finding their targets. The pilot of the third vehicle detonated his bomb, apparently unable to return to his base due to combat damage to the aircraft. another sortie of the Ki-167 was missing.

By the end of the war, two aircraft of the Ki-67-P variant with more powerful engines were built, while the total number of Ki-67-1s produced for the army and navy amounted to 698 copies. In addition to the Mitsubishi company, they were produced at the factories of the Kawasaki, Tachikawa and Nippon Kokusai companies.

Characteristics of the Ki-67-1: crew - 6-8 people, power plant - 2 Na-104 engines with a capacity of 1900 hp each. With. (1417 kW), wingspan - 22.5 m, its area - 65.85 m², aircraft length - 18.7 m, height - 7.7 m, empty weight - 8649 kg, take-off weight - 13 765 kg, maximum speed - 537 km / h at an altitude of 6000 m, cruising speed - 400 km / h, range - 3800 km, time to climb 6000 m - 14.5 min, service ceiling - 9470 m, armament - one 20-mm cannon, four 12.7 machine guns, 800 kg bombs or one torpedo.

Ki-109

In November 1943, at the Army Aviation Research Institute in Tachikawa, work began on converting the Ki-67 bomber into a heavy fighter under the designation Ki-109. The fighter was to be equipped in the forward fuselage with one 75-mm Type 88 anti-aircraft gun. It was assumed that the firing range of this gun would allow fighters to operate without entering the defensive fire zone of American B-29 bombers.

The construction of the first experimental aircraft was completed in August 1944, and after successful tests, an order was issued for the construction of 44 Ki-109 aircraft (a high-altitude fighter of the army type 4). The first 22 copies were equipped with two engines

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It was planned to install Na-104 Ki engines with turbochargers on subsequent aircraft. Ki-109 fighters entered service with the 107th Sentai.

Characteristics of the Ki-109: crew - 4 people, power plant - 2 Na-104 engines with a capacity of 1900 liters each. With. (1417 kW), wing span - 22.5 m and its area - 65.85 m², aircraft length - 17.95 m, height - 5.8 m, empty weight - 7424 kg, takeoff weight - 10 800 kg, maximum speed - 550 km/h at an altitude of 6000 m, range - 2200 km, practical ceiling - 9470 m, armament - one 75-mm cannon and one 12.7-mm machine gun.

"Nakajima"

In 1917 Marine engineers Chikuhei Nakajima and Seibei Kawanishi founded an aircraft manufacturing firm, which in 1920, after the departure of S. Kawanishi, was named Nakajima. In 1924, having successfully completed several aircraft projects, Nakajima began to produce aircraft engines, the first of which was the licensed French Lorraine engine. The following year, the company purchased the British engine "Jupiter", on the basis of which it began to produce its own engine "Model Vi". During World War II, Nakajima was one of the few firms that produced all products (from aircraft to engines) in their own factories. This allowed the company to produce more than 19,500 aircraft from 1941 to 1945, which accounted for 28% of the total number of Japanese aircraft built and 37% of the total number of combat aircraft. Nakajima ensured the production of the Ki-43, Ki-44, Ki-84 fighters and the Ki-49 bomber for the army. For the fleet, she produced the BSN, B6M bombers and the JIN fighter.

ADM

The A4N1 biplane fighter (marine type 95 model 11 fighter) was adopted by the fleet in 1935. It was first used in the Sino-Japanese conflict in 1937, in the Pacific War it was used as a liaison and

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training aircraft. The total number of A4N1 machines built was 221 copies.

Characteristics of A4M1: crew - 1 man, power plant — 1 engine "Nakajima" "Hikari" with a capacity of 730 liters. With. (544 kW), wingspan - 10.0 and their area - 22.89 m²,

aircraft length - 6.64 m, height - 3.07 m, Bec nyc-togo - 1276 kg, take-off Bec - 1760 kg, maximum CKO- height - 352 km / h At an altitude of 3200 m, cruising speed - 233 km / h , range - 846 km, time to climb 3000 m - 3.5 minutes, practical ceiling - 7740 m, armament - two 7.7-mm machine guns type 92 and 60 kg of bombs.

A6M2-N

In the fall of 1940, the Navy issued a task to develop a single-seat hydrofighter capable of providing cover for landing operations and combat operations by Japanese troops on the atolls of the Pacific region. The Kawanishi firm began to develop the NIKI hydrofighter, but the fleet, believing that Kawanishi would not have time to quickly develop the aircraft, in February 1941 issued a contract to the Nakajima firm for the development of a float version of the well-proven Mitsubishi A6M2 fighter. The landing gear was removed from the aircraft, the niches were closed up, and a large BOK float was installed under the fuselage on a pylon and U-shaped rack. Two stabilizing floats were installed under the wing, the standard armament of the AbM2 fighter was retained. The first prototype A6M2-N (Float Fighter Marine Type 0 Model 22) took off on December 7, 1941, the very day that the Japanese Hanan fleet was at Pearl Harbor.

The first A6M2-M vehicles (the code name of the allies "Kish e") arrived at the Yokohama kokutai, they were deployed in the Solomon Islands, where the Japanese landed during the battle in the Coral Sea. However, almost all Japanese hydrofighters were destroyed on August 7, 1942 during attacks by E4E fighters based on the American aircraft carrier Wasp. More successfully A6M2-N were used during the fighting in the Aleutian Islands. At the end of the war, when American aviation switched to massive bombardment of the Japanese Islands, hydrofighters from the

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Kutai "Otsu", based on Lake Biwa, were used as air defense fighters on. Honshu. In total, during the production period (from December 1941 to September 1943), the Koizumi plant delivered 327 A6M2-M vehicles.

Characteristics of A6M2-N: crew - 1 man, power plant - 1 Sakae-12 engine with a capacity of 950 liters. With. (708 kW), wing span - 12.0 m and its area - 22.4 m², aircraft length - 10.1 m, height - 4.3 m, empty weight - 1912 kg, takeoff weight - 2880 kg, maximum speed - 435 km / h at an altitude of 5000 m, range - 1781 km, time to climb 3000 m - 3.9 minutes, service ceiling - 10,000 m, armament - two 20-mm cannons, two 7.7-mm bullets - meta and two 60-kg bombs.

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B5N

In 1935, Nakajima began developing the BSN naval torpedo bomber. A prototype aircraft equipped with a Nakajima Hikari-2 engine with an HP 700 power. s., first took off in January 1937. Based on the results of tests, in November of the same year, the company received an order for the production of an aircraft under the designation V5yōyō (type 97 carrier-based torpedo bomber model 11). By Mepe exit from the factory, the aircraft entered the units that fought in China.

In December 1939, a new version of the V5M2 appeared with the Nakajima Sakae-11 engine. The B5M2 aircraft was put into service the following year under the designation "type 97 model 22 carrier-based torpedo bomber", by 1941 it had completely replaced the B5M1 aircraft in combat units. 144 BSN2 aircraft took part in the attack on Pearl Harbor; in the next 12 months, aircraft of this type sank the American aircraft carriers Hornet, Lexington and Yorktown.

Possessing weak defensive armament, the BSN2 torpedo bombers (Allied code designation Kae) suffered heavy losses from Allied fighters. Therefore, after the battle in the Philippines in 1944, the surviving vehicles were transferred to perform anti-submarine missions and maritime patrols. At the end of the war, the remaining vehicles were converted into training bombers and target or glider tugs. General

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The number of BSN aircraft built during the war years amounted to 1149 examples (Nakajima - 669, Aichi - 200 and XI Naval Arsenal in Hiro - 280).

Characteristics V5M2: crew - 3 people, power plant - 1 engine "Cakae" -11 with a capacity of 1000 liters. With. (746 kW), wing span - 15.52 and its area - 37.7 m², aircraft length - 10.3 m, height - 3.7 m, empty weight - 2279 kg, takeoff weight - 4100 kg, maximum speed - 378 km / h at an altitude of 3600 m, range - 1990 km, time to climb 3000 m - 7.7 min, service ceiling - 8260 m, armament - one 7.7-mm machine gun and one 800- kg torpedo or up to 800 kg bombs.

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In 1939, in parallel with work on BSN2, the development of the BON deck torpedo bomber began on Nakajima. At the beginning of 1941, the prototype BON "Tenzan" ("Heavenly Mountain") made its first flight with the engine "Nakajima" "Mamoru" with a capacity of 1800 hp. With. During flight tests, it turned out that the aircraft has directional instability due to the occurrence of a large moment from the propeller. To compensate for this moment, the keel had to be set at an angle of 2°10' to port. Military tests of two prototypes were carried out in 1942 from coastal airfields.

After testing on the Ryuho and Zuikaku aircraft carriers in the spring of 1943, the aircraft was put into series under the designation B6N1 (type 3 MO-del 11 carrier-based torpedo bomber), by the end of July the company had delivered 65 aircraft. The production aircraft differed from the experimental ones in a reinforced brake hook and attachments to the catapult on the landing gear. For takeoff with a full load, launch rocket boosters were used.

B6N 1 (of which only 133 were built) based on the aircraft carriers Sokaku, Teiho, Hiyo, Junyo and Zuikaku, they took part in the battle in the Philippines in June 1943. Many aircraft were lost due to the fact that the aircraft carriers Sokaku, Teiho and Hiyo

sunk by the allies.

Then the production of an improved version of the B6 M2 torpedo bomber began, in which the not very reliable Mamoru engine was replaced by the Kasei-25 engine. In October 1943 the firm

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delivered the first 18 aircraft under the designation B6N2 Model 12, after which the production of the B6 M1 was discontinued. But the heavy losses among the Japanese aircraft carriers caused the majority of the IP aircraft (as the B6N2 was nicknamed by the Allies) to be deployed to coastal airfields, especially after the battle in Leyte Gulf. The firm planned to produce a special coastal aircraft for use from unprepared airstrips B6N3. Two V6 M2 were converted into experimental V6MZ with Kasey-25s engines and reinforced landing gear with larger diameter wheels. However, things did not go further than prototypes. At the end of the war, many BON aircraft were used for suicide attacks. |

The total number of VBM aircraft built during the war years amounted to 1268 copies, including 133 B6 M1 and 1133 B6N2.

Characteristics of VBM2: crew - 3 people, power plant - | engine "Kasey" -25 with a capacity of 1850 liters. With. (1380 kW), wing span - 14.89 m and its area - 37.2 m², aircraft length - 10.87 m, height - 3.8 m, empty weight - 3010 kg, takeoff weight - 5650 kg, maximum speed - 481 km/h at an altitude of 4900 m, range - 1746 km, time to climb 5000 m - 10.4 min, service ceiling - 9040 m, armament - one 13-mm machine gun type 2, one 7.7- mm machine gun type 97 and one 800 kg torpedo or up to 800 kg bombs.

cm

In the spring of 1942, the Nakajima received an assignment to develop a carrier-based reconnaissance aircraft. The first prototype of the aircraft under the designation C6M, equipped with a Nakajima NK9B Homare engine with a power of 1820 hp. s., took off on May 15, 1943.

In the spring of 1944, the Bepsia of the C6N1 "Caron" ("Multicolored Cloud") aircraft (type 4 model 11 carrier-based reconnaissance aircraft) with a more powerful Homare-21 engine was put into mass production. C6N1 aircraft were first used in the Battle of the Mariana Islands, where they monitored Allied ships, successfully avoiding interception.

Soon, C6N1-B torpedo bombers (model 12) began to leave the assembly line. However, with the loss Japanese aircraft carriers

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by the end of the war, the need for carrier-based torpedo bombers disappeared. Instead, they began to produce C6M1-5 night fighters to defend the metropolis from attacks by American B-29 bombers. The C6N1-S night fighter had a crew of two and was equipped with two 20-mm cannons, mounted in the fuselage at an angle to the horizon.

A prototype high-altitude fighter C6N2 was produced, equipped with a Homare-24 engine with a turbocharger. But problems with the reliability of the turbocharger prevented this version of the fighter from being mass-produced until the end of the war. Bcero was released 463 C6M aircraft (code designation of the allies "Mugy").

Characteristics of S6M1: crew - 3 people, power plant - | engine "Homare" -21 with a capacity of 1900 liters. With. (1417 kW), wing span - 12.5 m, its area - 22.5 m², aircraft length - 11.0 m, height - 3.96 m, empty weight - 2968 kg, maximum take-off weight - 5260 kg, maximum speed — 606 km/h at an altitude of 6100 m, cruising speed — 387 km/h, maximum range — 5300 km, time to climb 6000 m — 8.15 min, service ceiling — 10,470 m, armament — one 7.7 mm machine gun.

ESN

In 1933, the firm received an order to develop the E8N reconnaissance seaplane. The first prototype, equipped with the Kotobuki-2 Kai-1 Nakajima engine, was ready and flown in March 1934. Then six machines of the pilot batch were built, which were competitively tested along with their competitors - Kawanishi EZK and Aichi EBA.

During the tests, the Nakajima aircraft demonstrated the best characteristics in terms of maneuverability and controllability, so in October 1935 it was put into production under the designation E8N1 (reconnaissance seaplane marine type 95 model 11). The E8N1 aircraft was widely used from aircraft carriers, battleships and cruisers BO during the war in China. Most often it was used as a reconnaissance and fire spotter, but sometimes as dive bomber. Later, the E8 M2 variant appeared with a more powerful Kotobuki-2 Kai-2 engine. Both options you

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launched at the factories of Nakajima and Kawanishi firms until 1940, the total number of E8N aircraft built was 755 copies. With the outbreak of the Pacific War, the E8N (Allied code designation "Dave") began to be withdrawn from service, but in the first year of the war, the E8N2 was still used on a number of ships, and later used as a communication and training aircraft.

Characteristics of E M2: crew - 3 people, power plant - 1 engine "Kotobuki" -2 Kai-2 with a capacity of 630 liters. With. (470 kW), wing span - 10.98 m and its area - 26.5 m, aircraft length - 8.81 m, height - 3.84 m, empty weight - 1320 kg, takeoff weight - 1900 kg, maximum speed - 299 km / h at an altitude of 3000 m, cruising speed - 185 km / h, range - 1581 km, climb time 3000 m - 6.5 min, service ceiling - 7270 m, armament - two 7.7-mm cannons - bolts and two 30-kg bombs.

see

In 1939, the Japanese Navy, through the Japanese Airlines, purchased one DC 4E aircraft from the American company Douglas and handed it over to the Nakajima company with the task of developing a strategic bomber based on it.

By the end of 1940, Nakajima had developed the GSN Shinzan (Mountain Valley) heavy bomber. The new aircraft retained the wing and landing gear of the American prototype, but received a new fuselage with a glazed nose and bomb bay, as well as a new two-fin plumage. The first flight of a prototype GSN1 equipped with Mamoru-11 engines took place on April 10, 1941, and soon three more O5MT prototypes joined the tests. However, due to the overweight of the aircraft structure and the unreliability of the engines, the characteristics of the machines were unsatisfactory.

In 1942, two machines of the S5M2 version were built with Kasei-12 aBn guns, but by that time a decision had been made to stop work on the GSN. The last two C5M1 machines were equipped with Kasei-12 engines and, together with GSN2 machines, were used for transport purposes under the designation GSN2-L (Shinzan-Kai transport aircraft).

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model 22). These aircraft received the Allied code 060, meaning "Liz".

Characteristics of the S5M1: crew - 7 (10) people, power plant - 4 Mamoru-11 engines with a capacity of 1870 hp each. With. (1394 kW), wingspan - 42.14 m and its area - 201.8 m², aircraft length - 31.02 m, height - 6.0 m, empty weight - 20 100 kg, maximum takeoff weight - 32 000 kg, maximum speed - 414 km/h at an altitude of 4100 m, cruising speed - 364 km/h at an altitude of 4000 m, range - 4186 km, time to climb 2000 m - 5.3 min, service ceiling - 7450 m, armament - two 20 mm type 99 cannons, four 7.7 mm type 97 machine guns and up to 4000 kg bombo.

G8N

By the end of 1942, the fleet needed long-range shore-based bombers capable of striking remote bases and Allied aircraft carrier formations. Therefore, in February 1943, Nakajima received an order for the development of the G8N1 Penzan (Mountain City) aircraft (experimental naval bomber). Even before the prototype was built, 48 cars were planned to be built.

The first experimental aircraft took off on October 23, 1944, three more experimental aircraft were built from December 1944 to June 1945. Flight tests of the experimental C8M1 machines were quite successful, although one of them was destroyed during the US carrier-based aircraft raid. In parallel, work was underway on the G8N2 variant, intended as a HOCH kamikaze aircraft Oka-43. However, all work on the G8N aircraft (Allied code designation "Rita") was stopped with the surrender of Japan.

Characteristics of G8N 1: power plant - 4 Homare-24 engines with a capacity of 2000 hp each. With. (1491 kW), wingspan - 32.54 m and its area - 111.0 m², aircraft length - 22.94 m, height - 7.2 m, empty weight - 17,400 kg, maximum takeoff weight - 32 150 kg, maximum speed - 590 km / h At an altitude of 5000 m, cruising speed - 390 km / h at an altitude of 4000 M, range - 7500 km, climb time 8000 m - 17.6 min, practical ceiling - 10 200 m, armament — six 20-mm cannons type 99, four 12.7-mm machine guns type 2 and up to 4000 kg of bombs.

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JIN

In May 1941, a prototype long-range escort fighter J1M1 took off for the first time. Tests of two experimental machines by the fleet showed that THEM! inferior to the A6M2 fighter in all respects, except for the flight range. In October 1941, the firm was asked to convert the vehicle into a shore-based reconnaissance variant. The modified aircraft successfully passed flight tests in July 1942, after which it was launched into a series under the designation IM1-S (reconnaissance marine type 2 model 11C) and began to be delivered to the troops from April 1942. When the Allies first encountered the JIN1-C off the Solomon Islands, they identified it as a fighter and gave it the code name "Irving".

As soon as the Americans intensified the night bombardment of Japan, the commander of the 251st Kokutai, Yasuna Kozono, proposed using the LM aircraft as a night fighter, installing two 20-mm cannons in the observer's cockpit at an angle of 30 ° for forward-upward firing and two forward-firing cannons. -down. When a fighter equipped in this way shot down two American B-24 bombers, the naval headquarters became interested in this proposal and placed an order with Nakajima for the production of the LM1-5 Gekko (Moonlight) night fighter. Production of the fighter began at the Koizumi plant in August 1943. The JIN1-S fighter differed from the earlier version of the reconnaissance aircraft by having a crew reduced to two and installing additional guns for firing up and down. In addition, a radar was installed in the forward fuselage, and on some machines a searchlight was installed. Later, down-firing cannons were abandoned for the reason that fighters rarely managed to get over the formation of bombers, in addition, there were difficulties with aiming. The JINI-S night fighters of the 251st, 302nd, and 322nd Kokutai proved their worth against B-24 bombers, which were not well adapted to night attacks. With the advent of the B-29, the Japanese night fighters, which did not have a sufficiently high speed, were unable to make more than one attack on the formation of bombers.

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The production of fighters continued until December 1944, during the war 479 copies of the JIN were produced, most of which were J1M1-5. Many night fighters were lost in the last months of the war, when they, equipped with two 250-kg bombs, were launched use for kamikaze attacks.

Characteristics of JIN1-S: crew - 2 people, power plant - 2 Sakae-21 engines with a capacity of 1130 hp each. With. (843 kW), wing span - 16.98 m and its area - 40.0 m², aircraft length - 12.77 m, height - 4.56 m, empty weight - 4840 kg, maximum takeoff weight - 8185 kg, maximum speed - 505 km/h at an altitude of 5840 m, range - 2540 km, time to climb 5000 m - 9.6 min, practical ceiling - 9320 m, armament - two (sometimes three) 20-mm guns for firing upwards, two 20mm down-firing guns and one 20mm forward-firing gun.

JOY

In September 1944, the Nakajima firm received an order to develop a jet aircraft similar in design to the German Me 262 aircraft. have a shortened takeoff distance for operations from coastal

aerodromes subjected to massive bombardment by American aircraft. In production, the aircraft should be extremely simple, since it was assumed that it would be assembled by unskilled workers.

The design firm, led by Ka3yo Ohno and Kenichi Matsumura, completed the project very quickly, but the Japanese industry was unable to supply the required jet engines immediately. Initially, the prototype aircraft, designated J9-1 "Kikka" ("Orange Flower"), was equipped with a pair of Tsu-11 engines with a thrust of 200 kgf, the design of these engines was based on the development of the Italian company "Campini". However, such a low thrust-to-weight ratio of the machine did not suit the customer, so a more powerful Ne-12 engine with a thrust of 340 kgf was developed. This engine also did not meet the requirements

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AM of the terms of reference, therefore, in order to speed up the development, they decided to purchase two samples of the Me 262 aircraft in Germany and copy its design along with the engine. The dismantled vehicles were loaded on board the German submarine U-234, which left Germany in March 1945 and headed for Japan. However, the submarine with its 30M cargo was, according to some sources, captured by the American Navy, and according to other sources, sunk on May 13, 1945, this event again changed the plans of OHO and Matsumura.

Soon the Japanese embassy in Berlin sent photocopies of the drawings of the BMW 003B engine, which was equipped with He 162 jet fighters. so that the aircraft complies with the parameters of the technical task.

The first pilot aircraft began factory taxiing on June 30, 1945. The next month, the aircraft was dismantled and delivered to the naval air base in Kisaratsu, where it was reassembled and prepared for summer trials. The Kikka made its first flight on August 7, 1945 under the control of Lieutenant Commander S. Tanaoka. The aircraft handled well during the 20-minute flight, with the only concern being the long takeoff run. For the second flight, which took place four days later, the aircraft was equipped with boosters. However, due to the incorrect installation angle of the launch boosters, the pilot was forced to abort the takeoff by turning off the engines. As a result, the TY aircraft did not have enough runway length during braking, OH rolled onto the ground and decoupled.

The construction of the second prototype was nearing completion, and production of the next 18 aircraft began. However, the program was halted on August 15, although production of various versions of the aircraft was planned, including a two-seat trainer version, a reconnaissance aircraft, an army interceptor fighter under the designation Ki-201 Karyu (Fire Dragon) and a suicide aircraft. - attacks. After the war, one copy of the aircraft was sent to the United States, it was studied and tested at the Naval Air Station in Patuxent, Maryland.

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Characteristics of 19U1: crew - 1 person, power plant - two Ne-20 turbojet engines with a thrust of 475 kgf each, wingspan - 10.0 m and its area - 13.2 m², aircraft length - 8.13 m, height - 2.95 m, empty weight - 2300 kg, maximum takeoff weight - 4080 kg, maximum speed - 697 km/h at an altitude of 10,000 m, range - 940 km, time to climb 10,000 m - 26 min, practical ceiling - 12,000 m, armament - two 30-mm cannons in the nose and one 500-kg or 800-kg bomb.

Characteristics of Ki-201: crew - 1 man, power plant - two turbojet engines Ne-130 with a thrust of 960 kgf or He-230 with a thrust of 885 kgf, wingspan - 13.7 m and its area - 25.0 m², length of the aircraft - 13.7 m, height - 4.05 m, Empty weight - 4500 kg, maximum takeoff weight - 7000 kg, maximum speed - 852 km/h (Ne-130) and 812 km/h (Ne-230), range - 980 KM, practical ceiling - 12,000 m, armament - two 30-mm guns or two 20-mm guns.

Ki-27

In the middle of 1935, three firms (Kawasaki, Nakajima and Mitsubishi) took part in a competition for the creation of a single-seat fighter for army aviation. "Nakajima" proposed a single-seat monoplane fighter Ki-27, made on the basis of an initiative project of the company called "Type" R. E. The first prototype aircraft took to the skies on October 15, 1936. Comparative tests showed that the Ki-28 of the Kawasaki was the fastest of the three competitors, but Nakajima's Ki-27 was the most manoeuvrable. For military testing, the army ordered 10 pre-series Ki-27 samples, which were delivered from June to December 1937. After testing was completed at the end of 1937, the aircraft was put into mass production under the designation Ki-27a A).

In March 1938, Ki-27a fighters appeared in the skies of China; as new machines appeared, they were equipped with the 4th, 5th, 11th, 13th, 59th and 64th Fighter Sentai. As mass production began, the Ki-27a was replaced by a modification of the Ki-27b, which featured a cockpit canopy with an improved O630-r and an upgraded oil cooler. In addition to Toro, attachment points were added under the center section, on which you can

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it was necessary to hang four 25-kg bombs or two 130-l drop fuel tanks. The production of the Ki-27b was also established at Manshu Hikoki Seizo. A total of 3,399 Ki-27s were produced, including 1,379 manufactured by Mansyu.

During the armed conflict in the region of the Khalkhin-Gol River in the summer of 1939, Ki-27 aircraft, consisting of five fighter sentais, fought against Soviet fighters. The Ki-27 aircraft, having superiority over the I-15bis and I-153, however, were inferior in speed characteristics to the I-16 fighter, from which they suffered significant losses. At the beginning of the Pacific War, Ki-27 fighters (the original code name of the Allies "Abdul", and then "Nate"), consisting of the 1st, 11th, 50th, 54th and 77th Sentai, took part in the invasions of Burma, Malaya, Dutch East Indies and the Philippines. But then they began to be replaced by more advanced Ki-43, Ki-44 and Ki-61 aircraft. The Ki-27 remained in the Air Defense Forces of Japan until 1943, after which they began to be used as training aircraft. At the end of the war, the surviving vehicles carrying up to 500 kg of bomb load were used for kamikaze attacks.

Characteristics of the Ki-27a: crew - 1 person, power plant - 1 Na-No. engine with a capacity of 710 hp. With. (529 kW), wing span - 11.31 and its area - 18.55 m², aircraft length - 7.53 m, height - 3.25 m, empty weight - 1110 kg, maximum takeoff weight - 1790 kg, maximum speed - 470 km/h at an altitude of 3500 m, range - 1710 km, time to climb 5000 m - 5.36 min, service ceiling - 12,250 m, armament - two 7.7-MM machine guns type 89 .

Ki-43

The development of the Ki-43 Hayabusa (Sapsan) light fighter project began in 1937; Ki-43-1a (military type fighter | model 1A), equipped with a Na-25 engine and two 7.7-mm machine guns. Deliveries of the fighter to combat units began in June 1941, in August the 59th and 64th Sentai were re-equipped with it. At the beginning of December 1941, fighters

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Ki-43-1a supported the landings of Japanese troops in Malaya and Thailand, covered groups of Ki-21 bombers and stormed Allied airfields. The initial successes of the Ki-43-Ta were impressive. For example, Major A. Kupoe from the 64th Sentai scored 22 air victories on it, Senior Sergeant S. Anabuki from the 50th Sentai scored 30 victories in 173 sorties within 18 months. Moreover, S. Anabuki on October 8, 1943 in an air battle on

A Ki-43-1a fighter shot down two American B-24 bombers, after running out of ammunition rammed a third aircraft, and then made an emergency landing on the coast of the Burma Bay.

Soon the production of the Ki-43-Ib modification began, in which one 7.7-mm machine gun was replaced by a 12.7-mm Ho-103 machine gun, and then the Ki-43-Ic modification, which had two Ho-103. However, as soon as the allies came to their senses after the first defeats and studied the weaknesses of the Ki-43-1, the situation changed - the Japanese fighters began to suffer more and more losses. The Japanese response was the appearance of the Ki-43-Pa fighter-bomber (code designation "Oscar" or "Lt") with armored pilot's seat, fuel tanks protected with sheet rubber and a more powerful engine, which made it possible to increase the upper speed limit. In addition, aircraft of this version could carry up to 500 kg of bombs or drop fuel tanks on hangers.

In November 1942, mass production of the Ki-43-Pb version began at the Nakajima company, six months later the Gachikawa hikoki company joined the production. In May 1944, work began on an experimental batch of 10 Ki-43-Pa vehicles with a Na-115-P engine with a capacity of 1190 hp. c., no- allowed to reach a speed of 576 km / h. In 1944, aircraft of this version entered the army in small numbers. The total number of Ki-43s produced during the war years was 5886 aircraft.

Characteristics of Ki-43-Pb: crew - 1 man, power plant - 1 Na-115 engine with a capacity of 1150 liters. With. (858 kW), wing span - 10.84 m and its area - 21.4 m², aircraft length - 8.92 m, height - 3.27 m, empty weight - 1910 kg, maximum takeoff weight - 2925 kg, maximum speed -

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530 km/h At an altitude of 4,000 m, range - 1,760 km, time to climb 5,000 m - 5.8 min, service ceiling - 11,200 m, armament - two 12.7-mm machine guns and two 250-kg bombs under wing.

Ki-44

The first flight of the Ki-44 "Soki" ("Demon") fighter-interceptor took place in August 1940. Soon, the Ki-44 won competitive tests against the Ki-60 of the Kawasaki company and the imported Bf 109E, after which it was launched into a series under the designation Ki-44-Ia (military type 2 fighter model 1 A), its armament consisted of two 7.7-mm and two 12.7-mm machine guns.

Seven pre-production machines, together with the modified second and third experimental aircraft, were consolidated into an experimental squadron, which received the status of the 47th separate squadron in November 1941 and was transferred to the south of China. With the outbreak of the Pacific War, the 47th squadron took part in the battles over Malaya. The high landing speed and limited maneuverability of the Ki-44-1 made it unpopular with combat pilots. Soon its production was stopped, the total number of built Ki-44-I was 40 copies, including a small batch of Ki-44-G with four 12.7-mm machine guns and Ki-44-Ic.

Starting from August 1942, the Ki-44-P version with a more powerful Na-109 engine began to be produced. Only He- a large number of Ki-44-Pa machines were built, the main forces were thrown into the production of Ki-44-Pb. The Ki-44-Ps variant had more powerful armament, including four 20mm cannons or two 12.7mm machine guns and two 37mm cannons, and proved to be very effective against Allied heavy bombers. The final version was the Ki-44-Sh with the Nakajima Na-145 engine with a power of 2000 hp. with., increased wing surface area and increased keel. By the end of 1944, the production of "Juices" was stopped, freeing up assembly lines for the new Ki-84 aircraft, only three Sentai armed with Ki-44 remained in the army aviation. One of them, the 47th sentai (created

based on the 47th Experimental Squadron), BO distinguished himself while repelling American B-29 bombers on Tokyo, when one of his fighters managed to shoot down five bombers, including one car with a ramming attack. This experience led to the creation of five suicide squadrons in the 10th Air Division, which guarded the skies over Gokyo, whose task was to intercept B-29 aircraft. These squadrons were armed with the most lightweight Ki-44, Ki-84 and Ki-61 fighters. By the end of 1944, the pilots of the 10th Air Division accounted for 28 downed B-29 bombers, of which 16 were destroyed by ramming. During the war, 1225 Ki-44s (allied code "Toyo") of all versions were built, they were deployed as interceptors, primarily in Japan, but were also used in Sumatra, where they protected the oil fields.

Characteristics of the Ki-44-Pb: crew - 1 man, power plant — 1 Na-109 engine with a capacity of 1520 liters. With. (1133 kW), wing span - 9.45 m, its area - 15.0 m², aircraft length - 8.79 m, height - 3.25 m, empty weight - 2105 kg, maximum takeoff weight - 2993 kg, maximum speed — 605 km/h at an altitude of 5,200 m, range — 1,700 km, time to climb 5,000 m — 4.28 min, service ceiling — 11,200 m, armament — four 12.7 mm machine guns.

Ki-49

The Ki-49 Donryu (Storm Dragon) medium bomber was developed in early 1938 to replace the Ki-21 bomber. The first prototype aircraft, which took off in August 1939, was equipped with two Nakajima Ha-5 Kai engines with an output of 950 hp each. s., Nakajima Na-41 engines with a capacity of 1250 hp were installed on pre-production machines. With. In March 1941, the aircraft was put into service under the designation Ki-49-I (apmey type 100 heavy bomber model 1).

In February 1942, the 61st Sentai in China was re-equipped with Ki-49-I vehicles (codenamed "Ne ep"). Later, this bomber was widely used in battles over New Guinea, and also carried out raids over Northern Australia.

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K TOMY time it became clear that the power of the engines is not enough. In addition to Toro, seven or eight crew members were very cramped in the narrow fuselage of the aircraft. Later, in the spring of 1942, work began on the modernization of the bomber, and already in August, the Ki-49-Pa (heavy bomber army type 100 model 2A) with Na-109 Nakajima engines with a power of 1450 hp went into production. with., reinforced armor and protected fuel tanks. Then came the Ki-49-Pb version with 12.7 mm machine guns. Camo-planes Ki-49-Pa and Ki-49-Pb were part of the 7th and 61st Sentai in China in the summer of 1942, and were also in service with the 12th Sentai of the 3rd Air Army operating in Burma.

After the Allies landed in the Philippines, the Ki-49 aircraft, which were actively used in combat, began to suffer heavy losses. The greatest damage was inflicted on the units of the 4th Air Army in New Guinea as a result of constant allied attacks on Japanese airfields. From March to December 1943, six bombers of the Ki-49-Sh version were built, equipped with Na-117 Mom engines with a capacity of 2420 hp. With. Ki-49 aircraft were also used for special missions. So, for example, Ki-49-s were equipped with a magnetometer to search for submarines, and some Ki-49-Pas were used as landing aircraft or night fighters.

The total production of the Ki-49 during the war years amounted to 819 aircraft. After the defeat in the Philippines, the Japanese increasingly began to use the surviving Ki-49s for suicide attacks on Allied shipping. For this purpose, all weapons were removed from the aircraft, the crew was reduced to two people, and the bomb load was increased to 1600 kg.

Characteristics of the Ki-49-Pa "Donryu": crew - 7 (8) people, power plant - 2 Na-109 engines with a capacity of 1450 hp. With. (1081 kW), wing span - 20.42 m and its area - 69.05 m², aircraft length - 16.5 m, height - 4.25 m, empty weight - 6530 kg, maximum takeoff weight - 11

400 kg, maximum speed - 492 km / h at an altitude of 5200 m, cruising speed - 350 km / h, range - 2950 km, time to climb 5000 m - 13.65 min, service ceiling - 9300 m, armament - one 20 mm cannon, five 7.7 mm machine guns and 1000 kg of bombs.

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Ku-84

Designing a single-seat fighter Ki-84 "Khaya

te" ("Storm"), equipped with the Nakajima Na-45 engine, began in 1942. The first flight of the prototype took place in March 1943. From August 1943 to March 1944, a pre-production batch of 83 machines was manufactured which were improved during the trial operation. In October 1943, an experimental squadron was formed to test the fighter in combat conditions. According to the results of military tests, the fighter was put into service under the designation Ku-84-Ia (fighter type 4 Model 1A). Production began at the company's plant in Ota in April 1944, and a month earlier, the 22nd Sentai in China was equipped with pre-production aircraft. The first mass-produced vehicles, code-named "EtapK" by the Allies, were equipped with 10 sentai deployed in the Philippines to counter the advancing American troops. In an effort to speed up production of the new fighter, Nakajima opened a new line at its Otsonomiya plant. Here they began production of the Ku-84-Ic version, armed with two 20 mm cannons in the nose and two 30 mm cannons in the wing. The fighters of this version were intended to fight the B-29 bombers, which began to make raids on the cities of Japan. In March 1945, pilot K. Fujimoto on a Ki-84 fighter shot down three B-29 bombers, two of them by ramming. Lieutenant M. Ogawa from the 70th sentai by the end of the war had 7 downed B-29s and 2 downed P-51s.

In the last year of the war, various versions of the aircraft were developed, for example, the Ki-84M (Ki-117) high-altitude interceptor, the Ki-84R (Ki-84-I with an increased power engine), the Ki-113 (Ki-84-No. with reinforced fuselage design), etc. However, the Japanese could not launch all these developments into a series before the end of the war. The Ki-84 turned out to be the best Japanese interceptor of the Second World War, with a total of 3,382 aircraft produced.

Characteristics of Ki-84-1a: crew - 1 man, power plant - 1 Na-45 engine with a capacity of 1800l. With. (1342 KBr), wing span - 11.24 m and its area - 21.0 m², aircraft length - 9.92 m, height - 3.39 m, empty weight - 2660 kg, max.

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small take-off weight - 3890 kg, maximum speed - 631 km/h at an altitude of 6120 m, range - 1695 km, time to climb 5000 m - 5.9 min, service ceiling - 10,500 m, armament - two 20-MM guns in the nose, two 12.7 mm machine guns in the wing and 500 kg of bombs.

Ki-115

On January 20, 1945, the Nakajima firm received an order from the army to develop a disposable aircraft for kamikaze pilots. The Ki-115a "Tsurugi" ("Saber") aircraft, developed under the guidance of Aori Kunihiro, turned out to be as simple as possible. A design feature of the aircraft was that any of the produced engines could be used as its power plant, the pilot was located in an open cockpit. Bomb load COCTO Yala from one bomb, non-retractable landing gear was planned to be dropped immediately after takeoff when performing a combat mission.

The first experimental aircraft took off in March 1945, but its characteristics were unsatisfactory. After the completion of flight tests in June 1945, an order was placed for the manufacture of 104 aircraft. These vehicles were supposed to be equipped with solid rocket boosters to accelerate the vehicle before hitting the target.

A variant of the Ki-1150 with a wooden wing and a cockpit moved forward was also developed, however, until the end of the war, not a single machine of this version was built by eHa. In total, until August 1945, 105 Ki-115a vehicles were manufactured, which did not have time to take part in the hostilities.

Characteristics of the Ki-115a: crew - 1 person, power plant - 1 Nakajima Na-35 engine with a capacity of 1130 liters. With. (843 kW), wing span - 8.6 m and its area - 12.4 m², aircraft length - 8.55 m, height - 3.3 m, weight of the Toro - 1640 kg, maximum takeoff weight - 2880 kg, maximum speed - 550 km / h at an altitude of 2800 m, cruising speed - 300 km / h, range - 1200 km, armament - one bomb weighing 250) or 800 kg under the fuselage.

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"Rikugun"

Ki-93

At the end of the war, the Army Aviation Research Institute (Rikugun) developed the Ki-93 heavy fighter. The new fighter, equipped with Mitsubishi Na-214 engines, was intended to fight Allied high-altitude bombers, as well as surface ships. The main feature of the project was a large-caliber gun located in the ventral gondola. The aircraft was developed in two versions - interceptor and attack aircraft. In the interceptor version, the Ki-93-1a aircraft, in addition to two 20-mm fuselage cannons and one 12.7-mm machine gun, was equipped with one 57-mm cannon in the ventral gondola. The Ki-93-15 attack aircraft was supposed to carry one 75-mm cannon in the ventral gondola and one 12.7-mm machine gun for firing into the rear hemisphere, as well as two 250-kg bombs.

The production of the Ki-93 was carried out at the I Army Aviation Arsenal in Tachikawa. The first prototype Ki-93-1a aircraft was produced in April 1945, but the Japanese did not have time to complete flight tests before the end of the war. The second experimental aircraft was built in the version of the attack aircraft Ki 93-ŷ, but they did not even have time to fly around it.

Characteristics of Ki-93-1a: crew - 2 people, power plant - 2 Na-214 engines with a capacity of 2400 liters each. With. (1790 kW), wing span - 19.0 m and its area - 54.75 m², aircraft length - 14.22 m, height - 4.85 m, empty weight - 7686 kg, take-off weight - 10 660 kg, maximum speed - 624 km / h at an altitude of 8300 m, cruising speed - 350 km / h, range - 3000 km, climb time 6000 m - 9.05 min, service ceiling - 12 050 m, armament - one 57-mm gun No-401, two 20-mm guns No-5 and one 12.7-mm machine gun.

"Tachikawa"

The Tachikawa aircraft manufacturing company (Gachikawa. Hikoki kabushiki kaisa) was founded in 1924, but its production capacity in the 1920s-1930s. were small. From the intro

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After the Japanese invasion of World War II, Tachikawa dramatically increased its output by building new factories in Okayama and Kofu. The Tachikawa accounted for about 9% of the total aircraft production in Japan during the war years. The main products of the company were the licensed Ki-43 fighter, the Ki-36 attack aircraft of our own design, the Ki-9, Ki-17, Ki-54 and Ki-55 training aircraft, as well as the Ki-34 transport aircraft.

Ki-9

In April 1934, the Army Aviation Headquarters issued an order to Tachikawa for the development of a transitional training aircraft equipped with a Hitachi Na-13a engine. The first experimental aircraft took off on January 7, 1935.

According to the test results, the aircraft went into production under the designation Ki-9 (transitional training aircraft army type 95-1 model A). Soon the company began to produce an improved version of the aircraft under the designation Ki-9 Kai (Model B). This version of the aircraft was lighter, had a stronger undercarriage and a shorter fuselage. A total of 2618 Ki-9 machines were produced, which were built at Tachikawa and Tokyo Hikoku. During the Pacific War, the Ki-9 aircraft (code designation Spruce) was used to train army aviation pilots.

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Characteristics of the Ki-9: crew - 2 people, power plant - | Ha-13a engine with 350 horsepower. With. (261 kW), wingspan - 10.32 m and its area - 24.5 m², aircraft length - 7.53 m, height - 3.0 m, empty weight - 1015 kg, take-off weight - 1425 kg, maximum speed - 240 km / h, cruising speed - 150 km / h, time to climb 1000 m - 4.9 minutes, flight duration - 3.5 hours.

Ki-17

In April 1935, Tachikawa received an order to develop a new training aircraft. The first experimental aircraft equipped with the Hitachi Na-12 engine took off in July 1935. After testing and some modifications, the aircraft was put into production under the designation Ki-17 (training aircraft designed by

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May type 95). Bcero company produced 560 Ki-17 vehicles (code designation "Sedag").

Characteristics of the Ki-17: crew - 2 people, power plant - | Na-12 engine with a capacity of 150 liters. With. (112 kW), wingspan - 9.82 m and its area - 26.02 m², height - 2.95 m, empty weight - 618 kg, takeoff weight - 900 kg, maximum speed - 170 km/h , cruising speed - 130 km/h, service ceiling - 5300 m, flight duration - 3.45 4.

Ki-36/Ki-55

In May 1937, the Army Aviation Headquarters announced a competition for the development of a close support aircraft. The Mitsubishi Ki-35 and Tachikawa Ki-36 projects were presented for the competition, as a result, the headquarters ordered the construction of a prototype of the Ki-36 aircraft. A prototype equipped with a Hitachi Na-13 engine made its first flight on April 20, 1938.

The aircraft was put into production in November 1938 under the designation Ki-36 (army type 98 close support aircraft). Being generally similar to the prototype, the production aircraft had two 7.7 mm machine guns and a more powerful Hitachi Na-13a engine. Production was launched at Tachikawa in November 1938, and in 1940 Kawasaki was connected to its production.

The Ki-36 aircraft, which received the code designation "Ida" from the Allies, was initially used in China, and quite successfully. However, at the beginning of the Pacific War, it turned out that it was too vulnerable to allied aircraft, so in 1943 all Ki-36s were returned back to China. By the time the program was terminated in January 1944, 1334 vehicles had been built (862 on the Gachikawa and 472 on the Kawasaki).

The handling characteristics and reliability of the Ki-36 have shown it to be an ideal aircraft for use as a trainer. After testing the prototype in September 1939, the army ordered this aircraft under the designation Ki-55 (military type 99 advanced flight training aircraft). In addition to military training units

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The Ki-55 was also used in civilian schools operating under BOCHHbIM contracts. In addition to Toro, the Ki-55 was delivered to Thailand. Its production was completed in December 1943, the total number was 1389 vehicles (Tachikawa - 1078 and Kawasaki - 311). Last

year of the war, the Ki-36 and Ki-55 were used by kamikaze pilots, for this purpose the aircraft carried one 250-kg or 500-kg bomb.

Characteristics of the Ki-36: crew - 2 people, power plant - 1 engine Na-1 Za power 510 l. With. (380 kW), wingspan - 11.8 m and its area - 20.0 m², length of the aircraft - 8.0 m, height - 3.64 m, empty weight - 1247 kg, maximum take-off weight - 1660 kg, maximum speed - 348 km/h at an altitude of 1800 m, cruising speed - 235 km/h, range - 1235 km, service ceiling - 8150 m, armament - two 12.7-mm machine guns and 150 kg of bombs.

Characteristics of the Ki-55: crew - 2 people, power plant - 1 Ha-13a engine with 510 horsepower. With. (380 kW), wingspan - 11.8 m and its area - 20.0 m², aircraft length - 8.0 m, height - 3.64 m, empty weight - 1292 kg, take-off weight - 1721 kg, maximum speed - 349 km / h at an altitude of 2200 m, cruising speed - 235 km / h, range - 1060 km, time to climb 3000 m - 6.9 min, service ceiling - 8200 m, armament - one 7.7 mm machine gun and 250 kg of bombs.

Ki-54

At the end of 1939, by order of the Army Aviation Headquarters, the development of the Ki-54 multi-purpose training aircraft began. In accordance with the terms of reference, the new aircraft should be used simultaneously for the training of all members of the bomber's crew: pilot, navigator, scorer, gunner and radio operator.

The first experimental aircraft equipped with Hitachi Na-13a engines took off at the end of the summer of 1940. After minor modifications, it was put into production in 1941 under the designation Ki-54a (military type advanced flight training aircraft | model A) he had no weapons. Soon, the serial launch of the Ki-54b variant (military type 1 combat training aircraft model B) began, which had four movable booms.

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forging installations. The aircraft was used in almost all combat training schools for army pilots, as well as in civilian flight schools that trained pilots for the army. Variant of the Ki-54s aircraft (army transport aircraft

sky type | model C) was intended to be used as a liaison aircraft or to carry eight people. At the same time, its civilian version was under construction under the designation U59. By the end of the war, several machines of the Ki-54 variant (patrol bomber army type | model O) were produced, which could carry eight 60-kg depth charges. A total of 1,368 Ki-54 aircraft (code designation "HisKogu") of all modifications were built.

Characteristics of the Ki-54: crew - 4 people, power plant - 2 Na-13a engines with a capacity of 510 hp each. With. (380 kW), wing span - 17.9 m and its area - 40.0 m², aircraft length - 11.94 m, height - 3.58 m, empty weight - 2954 kg, maximum takeoff weight - 3897 kg, maximum speed - 376 km / h at an altitude of 2000 m, cruising speed - 240 km / h, range - 960 km, climb time 5000 m - 20.3 min, service ceiling - 7180 m, armament - four 7.7 mm machine gun |

Ki-74

In 1939, the development of the Ki-74 long-range reconnaissance aircraft began, capable of conducting reconnaissance of the territory of the Soviet Union to the west of Lake Baikal from air bases in Manchuria. The aircraft was supposed to have a flight range of 5,000 km and a speed of at least 450 km/h. However, the development of the airtight cabin of the aircraft was delayed, and the work was suspended.

At the end of 1941, work resumed, but the aircraft was already being considered as a long-range high-altitude bomber capable of reaching the United States. The aircraft project was approved by the Army Aviation Headquarters in September 1942, after which the company received an order for

construction of three experimental aircraft with Na-211-1 Ki engines, equipped with turbochargers. Flight tests of experimental machines were carried out in the spring of 1944, however, according to the test results, the Na-211-1 Ru engines had to be replaced with less powerful, but more reliable Mitsubishi Na-104 Ru engines, also based

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shennymi turbochargers. Until the end of the war, 13 pre-production aircraft were produced, which were supposed, first of all, to be used against the bases of American B-29 bombers on the island of Saipan, but there is no information about the combat use of the Ki-74. The fourth pre-production Ki-74 (Ho 7) aircraft was intended for a non-stop flight to Germany, but even before the aircraft was prepared for the flight, Germany capitulated. The Ki-74 aircraft received the code designation "Pat" or "Patsy" from the Allies.

Characteristics of the Ki-74: crew - 5 people, power plant - 2 Na-104 Ru engines with a capacity of 2000 hp each. With. (1491 kW), wing span - 27.0 m, its area - 80.0 m², aircraft length - 17.65 m, height - 5.1 m, empty weight - 10,200 kg, take-off weight - 19,400 kg, maximum speed — 570 km/h at an altitude of 8500 m, cruising speed — 400 km/h at an altitude of 8000 m, range — 8000 km, time to climb 8000 m — 17 min, service ceiling — 12,000 m, armament - one 12.7 mm machine gun and 1000 kg of bombs.

"Hitachi"

LXG1

With the outbreak of hostilities for the needs of naval aviation, a large number of Chidori light passenger aircraft, developed in 1935 by Hitachi (Hitachi kokuki kabushiki kaisha), were requisitioned. The serial production of this biplane, designed to carry three passengers, was carried out by the Tokyo racy Denki plant. The aircraft was modified and, under the designation 〃〃〃 I, was used as a communication aircraft, as well as for transporting personnel from aircraft carriers to shore and back.

Characteristics EXC1: crew - 1 man, power plant — 1 engine "Jimpu" -3 with a capacity of 150 liters. With. (112 kW), wingspan - 9.2 and their area - 18.0 m², aircraft length - 7.6 m, height - 2.7 m, empty weight - 550 kg, take-off weight - 980 kg, maximum speed — 215 km/h, cruising speed — 180 km/h, range — 720 km, service ceiling — 4700 m.

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Foreign aircraft

BR20

At the beginning of 1938, the first vehicles from a batch of 75 VK20 bombers, purchased by the Japanese from Fiat, arrived. Italian-built bombers took part in the fighting in China, supporting Mitsubishi CIM bombers. However, the BR20s, which were later codenamed "Ruth" by the Allies, were not particularly popular with Japanese aircrews, who considered them lightly armed and vulnerable to enemy fire. With the outbreak of the Pacific War, they gradually became

decommission.

Ki-20/K 51

Before the war, Mitsubishi built 6 aircraft under the designation Ki-20. These were the Junkers K 51 aircraft produced under license, which were a tailor-made version of the C 38 aircraft. The Ki-20 aircraft, equipped with Junkers L 88 engines,

originally built as a bomber (heavy bomber army type 92), as a defensive armament it had | cannon caliber 20 mm and 2 machine guns caliber 7.7 mm, could carry 5000 kg of bombs. In the last years of the war, Ki-20s were used as transport aircraft.

L2D/DC-3

Before the war, the Japanese purchased 20 DC-3 aircraft from the American company Douglas. Firm "Sova" ("Owl hikoku koge KK"), by order of the fleet, finalized the design of the DC-3 to Japanese standards and built two aircraft under the designation 121 (sea transport type D model 11). Soon a modernized aircraft was launched, designated 1202 (sea transport type 0 model 22), it was intended for use as a personal aircraft for fleet command and as a transport aircraft for transporting 21 passengers or 4500 kg of cargo. The production of 120 was organized at the Sova and Nakajima firms, the total number of machines built was

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487 copies. The aircraft was introduced in the following modifications:

1201 with Pratt & Whitney SB3G engines with 1000 hp each. With.;

1202 with Mitsubishi Kinsei-43 engines with a capacity of 1080 hp each. With.;

1203 with Mitsubishi Kinsei-51 engines with a capacity of 1300 hp each. With. or "Mitsubishi" "Kinsey" -53 with a capacity of 1300 hp each. With.;

1204 with Mitsubishi Kinsei-51 engines with a capacity of 1300 hp each. With.;

1205 with Mitsubishi Kinsei-62 engines with a capacity of 1560 hp each. With.

Units from 120 took part in the fighting in the Philippines and China, the Allies assigned the code designation "Tabby" to the 12p aircraft.

Features 1204: crew - 3 (5) people, power plant - 2 Kinsey-5 engines | with a capacity of 1300 liters. With. (969 kW), wing span - 28.96 m, its area - 91.6 m², aircraft length - 19.72 m, height - 7.46 m, empty weight - 7125 kg, maximum takeoff weight - 10 900 kg, maximum speed — 307 km/h at an altitude of 2400 m, cruising speed — 225 km/h at an altitude of 2000 m, range — 2800 km, time to climb 5000 m — 26.6 min, service ceiling - 10,900 m, armament - one 12.7-mm machine gun type 2 and two 7.7-mm machine guns type 92.

Ki-34/11M1/rs-2

In 1937, Nakajima built 6 licensed Douglas DC-2 aircraft. After that, Nakajima, commissioned by the army, began producing a smaller version of the DC-2 under the designation Ki-34 (Army Type 97 transport aircraft), this aircraft could take 8 passengers on board. The Ki-34 aircraft was used as a liaison and military transport aircraft, several machines were delivered to the fleet under the designation LINI (sea transport aircraft type 97 model 11). A total of 351 vehicles were built (52 Nakajima and 299 Tachikawa). The Allies gave them the code name "Thora".

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Characteristics of DC-2: crew - 2 people, power plant - 2 Wright SGR 1820-F52 engines with a capacity of 760 hp each. With. (567 kW), wingspan - 25.91 m and its area - 87.23 m², aircraft length - 18.89 m, height - 4.97 m, empty weight - 5628 kg, take-off weight - 8419 kg, maximum speed — 338 km/h, cruising speed — 306 km/h, range — 1400 km, service ceiling — 6843 m, number of passengers — 14-16 people.

Characteristics of the Ki-34: crew - 3 people, power plant - 2 Nakajima Kotobuki -41 or Nakajima Ha-Ib engines with a capacity of 780 hp each. With. (582 kW), wingspan - 19.92 m, its area - 49.2 m², aircraft length - 15.3 m, height - 4.15 m, empty weight - 3500 kg, takeoff weight - 5250 kg, maximum speed - 360 km / h at an altitude of 3000 m, cruising speed - 310 km / h, range - 1200 km, time to climb 3000 m - 6.6 min, practical ceiling - 7000 m.

NHOT/OE

Before the war, Japan purchased two DF flying boats from Douglas. They were in service with the fleet under the designation NHO! (experimental flying boat type O).

Characteristics of OE: crew - 3-4 people, power plant - 2 Wright R-1820-G2 engines with a capacity of 850 hp each. With. (634 kW), wing span - 28.96 m and its area - 120.31 m², aircraft length - 21.34 m, empty weight - 7480 kg, takeoff weight - 12 927 kg, maximum speed - 286 km / h at an altitude of 2073 m, cruising speed - 257 km/h, range - 4344 km, service ceiling - 4237 m, number of passengers - 32-48.

A8V1/2PA-B3

In the prewar years, Japan purchased a batch of 30 2PA-B3 fighters from the American company Seversky Starcraft Corporation. The author of this aircraft was the Russian aviator A.N. Prokofiev-Seversky, who migrated to CILIA in 1918, where thirteen years later he founded his own plane

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construction company. The 2RA fighter received the Japanese designation A8UI (sea-type \$ fighter). OH was used as a long-range reconnaissance aircraft, as well as to escort and protect bombers from enemy fighters. The Allies gave him the code designation "Dick".

Characteristics 2RA-VZ: crew - 2 people, power plant - | engine "Wright" R-1820 with a capacity of 1000 liters. With. (746 kW), wing span - 10.97 m and its area - 20.44 m², aircraft length - 7.72 m, empty weight - 1900 kg, takeoff weight - 3645 kg, cruising speed - 389 km / h, range - 1930 km, practical ceiling - 7620 m, armament - three 7.62-mm machine guns and 227 kg of bombs.

A7He1/He 1128

In 1938, Japan purchased a batch of 30 He 112B fighters from Heinkel. Under the designation A7He! (fighter-interceptor marine type He) this interceptor was in service with the fleet. The Allies gave him the code name "Jerry".

AXHe1/Not 1000

The fleet was armed with three He 1000 fighters purchased from Germany, they were given the designation AXHeI (experimental interceptor marine type He). In addition, a license for the production of this fighter was bought from the Germans, this production was to be launched at the new Hitachi plant. But due to a number of circumstances, the Heinkel company was unable to supply the necessary technological equipment, so the production of the aircraft had to be stopped.

Characteristics of AHNe!: Crew - | man, power plant - | engine DB 601M with a power of 1175 HP. (876 kW), wing span - 9.4 m and its area - 14.6 m², aircraft length - 8.2 m, height - 3.6 m, empty weight - 1810 kg, takeoff weight - 2500 kg, maximum speed — 670 km/h at an altitude of 5000 m, cruising speed — 640 km/h, range — 890 km, service ceiling — 11,000 m, armament — one MG FF cannon and one MG 17 machine gun.

Sf rac

Aichi E16A1

Yokosuka MXY7 model 11

“Yokosuka MHU? model 22

Yokosuka MXY7 model 43 (training version)

Kawanishi H6K5

Kawanishi M1K1-)

Kawanishi N1K2-J

Kyushu J7W1 Kyushu KTOML Kyushu K11M/

Kyushu Q1W

Mitsubishi A5M

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SS

Mitsubishi C5M2

Mitsubishi E1M2

Mitsubishi G4M

Mitsubishi J2M

Muuy6ucu J8M

Mitsubishi Ki-15-! Mitsubishi Ki-21-! Mitsubishi Ki-46

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Nakajima J1N1

Nakajima J9Y1

Nakajima Ki-27

Nakajima Ki-43 Nakajima Ki-44

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Nakajima Ki-84

Nakajima Ki-115

Cosa 120 (DC-3)

4. BULGARIA

Since in the First World War Bulgaria acted on the side of Germany and Austria-Hungary, according to the decision of the Treaty of Versailles, all its aviation units were disbanded. In the 30s. Bulgaria, following the example of Germany, began to create its own Air Force and in 1940 had 371 aircraft in service. In 1940-1941 tg. 160 Bulgarian pilots were trained in Italy, Hungary and Germany.

Although Bulgaria joined the Berlin Pact in March 1941, its armed forces did not take part in the war against the USSR. German troops were brought into its territory, and Bulgarian aviation was mainly used to cover military and industrial facilities from attacks by Allied bombers.

After the entry of Soviet troops into the territory of Bulgaria, there was a change of government, the new government on September 5, 1944 declared war on Germany. In the next two months, the Bulgarian Air Force carried out more than 4,000 sorties against the armed forces of the Axis in Macedonia, Serbia and Kosovo, losing 23 aircraft in the process. Subsequently, Soviet aircraft (120 Yak-9 fighters and 120 Il-2 attack aircraft) entered service with the Bulgarian Air Force, but the vehicles that were previously in service continued to be used along with them.

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"DAR" DAR-3

The reconnaissance biplane DAR-3 "Karvan" was developed by the Bulgarian company DAR ("Derzhavna azroplanna rabotnitsa") in 1929. It was serially produced in two modifications - "Karvan" by Guy "Karvan" P, in total 21 aircraft were flown - sampler.

Characteristics of DAR-3: crew - 2 people, power plant - | engine "Spote-Kyype" 9 with a capacity of 480 liters. With. (358 kW), wingspan - 11.9 m and their area - 37.0 m², take-off weight - 1850 kg, maximum speed - 203 km / h at an altitude of 1000 m, service ceiling - 6850 m.

"SFCB"

K-4

In 1938, the SFKB ("Aircraft Factory Kaproni Bulgarski") developed the training, communication and reconnaissance biplane aircraft KB-4 "Chuchuliga" P, equipped with a K-975-E1R engine. After testing a prototype at the SFKB plant in Kazanlak, serial production of the aircraft equipped with the Wright E1P-975 engine was launched. Bcero built 28 KB-4 machines in two years. During the war they were used mainly in flight schools, at the end of the war a small number of surviving aircraft took part in combat operations against the Germans.

Characteristics of KB-4: crew — 2 people, power plant — | engine "Wright" E1P-975 with a capacity of 220 liters. With. (164 kW), wingspan - 11.54 and their area - 31.87 m², aircraft length - 8.62 m, empty weight - 1070 kg, takeoff weight - 1480 kg, maximum speed - 206 km / h at the ground, practical ceiling - 6500 m, armament - one machine gun.

KB-5

The reconnaissance and communication biplane KB-5 "Chuchuliga" Sh became a further development of the KB-4 machine. The aircraft was equipped with a Pollux II engine, its span was reduced

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upper wing, changed the nose of the fuselage, strengthened the landing gear and put more powerful weapons. The KB-5 was adopted by the Bulgarian Air Force at the end of 1939, during the war these machines were used against the Yugoslav and Bulgarian partisans. In October-November 1944, KB-5 took part in the hostilities against the Germans in Bulgaria, and then in Yugoslavia. They were used as training aircraft until the end of the war. Bcero was built 45 machines KB-5.

Characteristics of KB-5: crew - 2 people, power plant - 1 engine "Walter Pollux" with a power of 450 liters. With. (336 kW), wingspan - 10.9 m, empty weight - 1250 kg, maximum speed - 274 km / h at the ground, service ceiling - 6500 m, armament - two 7.7-mm machine guns and four 25-mm kg bomb.

KB-6

The front-line reconnaissance bomber KB-6 Papagal, developed at the SFKB, was a Bulgarian version of a licensed Ca.309 aircraft from the Italian company Caproni. The first flight of a prototype took place in 1940, a total of 9 machines were built. The aircraft was equipped with several cameras and could carry up to 400 kg of bombs. In addition, it was used as a light transport and training aircraft.

Characteristics of KB-6: crew - 3 people, power plant - 2 Argus As 10 engines with a capacity of 240 hp each. With. (179 kW), wingspan - 16.2 m, wing area - 38.4 m², aircraft length - 12.95 m, height - 3.52 m, empty weight - 1750 kg, range - 1550 km, climb time 3000 m - 19.3 min, practical ceiling - 6500 m, armament - three 7.7-mm machine guns.

KB-11

The prototype of the short-range reconnaissance aircraft KB-11 "Pheasant" first took off in 1941, in the same year the aircraft was put into production at the SFKB plant in Kazanlak. The aircraft flew until the end of 1942, a total of 24 aircraft were manufactured. Aircraft Kb-11 were used against the Bulgarians during the war.

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Russian and Yugoslav partisans, and in the autumn of 1944 acted against the Germans on the territory of Bulgaria and Yugoslavia.

Characteristics of KB-11: crew - 2 people, power plant - 1 Alfa Romeo 126 RC35 engine with a capacity of 770 liters. With. (574 kW), wing span - 12.8 m and its area - 25.23 m², aircraft length - 9.2 m, height - 3.8 m, takeoff weight - 2400 kg, maximum speed - 394 km / h near the ground, range — 1280 km, service ceiling — 8250 m, armament — four 7.92 mm machine guns.

Foreign aircraft

Ag 196

Seaplanes Ag 196A-3 entered the 161st Squadron, based in Varna, where they guarded the coast from the autumn of 1942 to the summer of 1944.

Bf 109

At the beginning of 1944, the 6th Regiment of the Bulgarian Air Force received 145 Bf 109C aircraft to replace the obsolete B-534 biplanes. Bf 109G fighters were mainly used in the air defense system of Sofia, by September 1944 only 30 combat-ready vehicles remained in the regiment.

B-71

The Bulgarian Air Force was armed with a small number of Czechoslovak B-71 bombers, transferred to them by the Germans. Under this designation, the Soviet aircraft SB-2M-100A was produced, which was built under license in Czechoslovakia.

Characteristics of the V-71: crew - 3 people, power plant - 2 M-100 engines with a capacity of 750 hp each. With. (559 kW), wingspan - 20.33 m and its area - 56.7 M², aircraft length - 12.57 m, height - 4.7 m, empty weight - 4060 kg, take-off weight - 5628 kg, maximum speed - 393 km/h at an altitude of 5200 m, range - 2150 km, time to climb 1000 m - 2.8 min, service ceiling - 9000 m, armament - four 7.62-mm machine guns and 600 kg bombs.

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B-135

In 1939, BBC Bulgaria purchased a batch of 12 B-135 fighters developed by the Czechoslovak company Ama. However, after receiving Bf 109 fighters from Germany, B-135 aircraft were used only for training flight personnel.

Characteristics of the B-135: crew - 1 person, power plant - 1 engine "Hispano-Suiza" 12-sg with a capacity of 835 liters. With. (623 kW), wingspan - 10.87 m and its area - 17.0 m², aircraft length - 8.5 m, height - 2.7 m, empty weight - 1924 kg, take-off weight - 2462 kg, maximum speed - 535 km / h, cruising speed - 460 km / h, range - 550 km, service ceiling - 8500 m, armament - one 20-mm cannon, two 7.7-mm machine guns and 220 kg of bombs.

m.v.200

The Germans handed over to the Bulgarian BBC several Bloch MB200 bombers, built under license by the Czechoslovak firms Aero and Avia. They were mainly used for crew training.

Characteristics of M.V.200 V4: crew — 4 people, power plant — 2 Spote Kupe 14Kir engines with a power of 900 hp each. With. (671 kW), wing span - 22.45 m and its area - 67.0 m², aircraft length - 16.0 m, height - 3.92 m, empty weight - 4300 kg, take-off weight - 7480 kg, max. low speed — 283 km/h at an altitude of 4,300 m, range — 1,000 km, time to climb 6,000 m — 23.1 min, service ceiling — 8,000 m, armament — three 7.5 mm bullets and 1,200 kg of bombs .

5. HUNGARY

After the end of the First World War, in accordance with the Treaty of Versailles, the size of the Hungarian army was limited, in addition, it was forbidden to have armored vehicles, heavy artillery and aircraft. One of the main goals of Hungary's foreign policy in the period between the two wars was the TOM, in order to regain lost territories, therefore, having established close ties with Italy and Germany, in the late 30s. began to re-equip the army and create its own air force.

Under the Munich Agreement of 1938, Hungary again annexed Southern Slovakia, and in March 1939, its troops occupied the East Slovak region as well. The following year, the Hungarians threatened to start hostilities against Romania, claiming the territory of Transylvania, but in August 1940, under pressure from the Germans, Romania returned the northern part of the disputed territory to Hungary.

After the German invasion of Yugoslavia in April 1941, Hungary sent its troops into a number of disputed Yugoslav regions, and at the end of June it entered the war with the Soviet Union. On the eve of Hungary's entry into the war, its Air Force was armed with 536 aircraft. The basis of fighter aircraft was 96 S.E.30, CR32 and S.K.42 aircraft, in the bombing

aviation, there were 70 Ca.13565 and Ju 86K aircraft, reconnaissance aviation consisted of 194 He 46, Fw 58, WM-16, WM-21, He 70 and He 111P aircraft, transport

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aviation had 10 Ca.101 and 5.M.75 aircraft. The remaining ca-planes of various types were in training and experimental units.

"Repulogpegyar"

Levente

In October 1940, the Levente | training aircraft, developed by the Hungarian firm Kerschorreruag, made its first flight. Subsequently, it was modified and in 1943 under the designation "Levente" I] adopted by the Hungarian Air Force. A total of 100 Levente machines of both modifications were produced. By that time, the situation on the Soviet-German front had developed in such a way that all Levente aircraft were not sent to active units, where they were used as liaison and staff aircraft.

Characteristics of "Geuesh" P: crew - 2 people, power plant - 1 engine "Hirth" HM 504 A-2 with a capacity of 105 liters. With. (78 kW), wing span - 9.45 m and its area - 13.5 mg, aircraft length - 6.08 m, height - 2.53 m, empty weight - 470 kg, maximum takeoff Bec - 750 kg , maximum speed - 180 km/h, cruising speed - 160 km/h, range - 650 km, practical ceiling - 4500 m.

"Manfred Weiss"

WM-16

In 1934, the Hungarian company Manfred Weiss developed the reconnaissance biplane WM-16 based on the licensed Fokker CV-D aircraft. A total of 12 cars were built. By the beginning of the war, the aircraft was obsolete, so it was used to perform secondary tasks.

Characteristics of UUM-16: crew - 2 people, power plant - | WM K-14 engine with 860 hp. With. (641 kW), wingspan - 15.3 and their area - 39.3 m², aircraft length - 9.55 m, height - 3.7 m, empty Bec - 2150 kg, takeoff - Hblm Bec - 3520 kg, maximum speed — 300 km/h, range — 1000 km, service ceiling — 8100 m, armament — one 7.7 mm machine gun.

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WM-21

The short-range reconnaissance and light bomber WM -21 sB- was a modernized version of the UUM-16 aircraft. The WM-21 aircraft were produced from 1938 by the Manfred Weiss and MAVAG factories in Budapest, as well as by the MWG in Giora.

Aircraft WM-21, participating in the armed conflict with Romania in August 1940, bombed one of the Romanian airfields. From the beginning of 1941, WM-21s began to be transferred to training and auxiliary units. In April-May 1941, several squadrons of these aircraft participated in the BO invasion of Yugoslavia. After the start of the war with the Soviet Union, they were used by the Hungarian army in the Ukraine and near Stalingrad. Since the spring of 1943, the UM-21 served as a training aircraft, and was also used against partisans in the areas of the CCCP occupied by the Germans. The total number of aircraft built was 128 units.

Characteristics of MM-21: crew — 2 people, power plant — | engine WM K-14 with a power of 860l. With. (641 KBr), span of the upper circle - 12.9 m, lower - 9.4 m and their area - 27.4 m², aircraft length - 9.64 m, height - 3.5 M, Empty weight - 2450 kg , takeoff Bec - 3500

kg, maximum speed — 340 km/h, cruising speed — 275 km/h, range — 700 km, time to climb 3200 m — 7.0 min, service ceiling — 8100 m, armament — three 7.7 - mm machine gun and light bombs.

Foreign aircraft

BE 109

By the autumn of 1942, the 5/1 Fighter Regiment operating on the Soviet-German front had re-equipped with Bf 109E and BE 109G fighters. These aircraft were mainly used to escort bombers and attack ground targets. In the spring of 1944, the 101/1 Fighter Regiment with Bf 109Gs was used to provide Hungarian air defense. By December 1944, the fighter units of the Hungarian BBC were completely reorganized - they were all included in the Luftwaffe.

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Despite the conclusion of a truce between Hungary and the USSR on January 20, 1945, the 101st Regiment continued to participate in battles against the Soviet Union, using its Bf 109G aircraft as attack aircraft. The remaining Hungarian units of the 8th Fighter Division continued to operate from the Austrian airfields as part of the Reich air fleet.

Characteristics Bf 109E-2: crew - 1 man, power plant — 1 engine OB 60 IH with a capacity of 1200 liters. With. (895 kW), wingspan - 9.9 m and its area - 16.2 m², aircraft length - 8.85 m, height - 2.6 M, empty weight - 2353 kg, maximum take-off weight - 2800 kg, maximum speed — 600 km/h at an altitude of 6000 m, cruising speed — 528 km/h, time to climb 5000 m — 5.2 min, service ceiling — 11,000 m, range — 650 km, armament — 2 machine guns MG 17 and 1 cannon MO 151.

CR30

Hungary purchased the first two CR30 aircraft from Italy in the summer of 1936, and in 1938 purchased a batch of these aircraft, including 10 two-seater CR30Bs.

Characteristics of the CR30: crew - 1 person, power plant - 1 "Na" AZOKA engine with a capacity of 740 liters. With. (552 kW), wingspan - 10.5 and their area - 27.6 m², aircraft length - 7.83 m, height - 2.63 M, empty weight - 1345 kg, takeoff weight - 1895 kg, maximum speed - 350 km/h, range - 850 km, climb time 1000 m - 5.3 min, climb time 4000 m - 8.5 min, practical ceiling - 8700 m, armament - two 7.7-mm (or 12.7 mm) machine gun.

Ca.101

A small batch of Ca.101 light military transport aircraft from the Italian company Caproni of BBC Hungary was purchased in the 1930s. These planes could carry up to 8 passengers.

Characteristics of Ca. 101: crew - 2 people, power YC-train - 3 Alfa Romeo engines D2Lynx with a capacity of 240 hp. With. (179 kW), wingspan - 19.68 m and its area -

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61.69 m², aircraft length - 14.37 m, height - 3.89 m, empty weight - 3275 kg, take-off weight - 4975 kg, maximum CKO- height - 165 km/h at an altitude of 1000 m, range - 2000 km, time to climb 5000 m - 40.5 min, practical ceiling - 6100 m. |

Sa. 135515

About 100 medium bombers Ca.135bis (Ca. 135 R.XI) were ordered for the BBC Hungary from the Caproni company.

Characteristics of Ca. 135: crew - 4 people, power plant - 2 Piaggio PXI RC40 engines with a capacity of 960 hp each. With. (716 kW), wingspan - 18.8 m and its area - 60.0 m², aircraft length - 14.38 m, height - 3.4 m, empty weight - 6100 kg, takeoff weight - 9600 kg, maximum speed - 440 km / h at an altitude of 4800 m, cruising speed - 370 km / h, range - 2000 km, time to climb 4000 m - 13.3 min, practical ceiling - 7000 m, armament - - one 12.7 mm machine gun, two 7.7 mm machine guns and 1600 kg of bombs.

Do 215

In early 1942, the Germans handed over four Do 215B-4 aircraft to the Hungarians. These aircraft became part of the 1st long-range reconnaissance squadron, which operated on the Soviet-German front from July 1942.

I eat 189

At the end of 1942, Hungary received a small batch of Fw 189A-2 aircraft. They were equipped with the 3/1 short-range reconnaissance squadron, which took part in the battles on the territory of the USSR from March 1943 to March 1944.

Not 46

Before the war, the Hungarian BBC delivered 36 He 46eUn aircraft, which were an export modification of the He 46e aircraft. In the summer of 1942, the 312th close reconnaissance squadron was sent to the Soviet-German front

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Hungarian corps, which included 12 He 46eUn aircraft. However, after some time the squadron was reoriented to carry out bomber missions.

Not 170

A batch of 18 He 170A aircraft was ordered by the Hungarian government in 1937. They entered service with the 1st separate long-range reconnaissance group, which in March 1939 flew sorties during Hungary's participation in the division of Czechoslovakia. In the summer of 1940, He 170A planes made many reconnaissance flights over the territory of Romania during the conflict over the northern part of Transylvania.

In April 1941, He 170 took part in the Balkan campaign, making reconnaissance flights over the territory of Yugoslavia, and on June 26, 1941, they made their first sorties in the outbreak of the war against the Soviet Union. Subsequently, He 170 aircraft carried out reconnaissance over the western regions of Ukraine.

The He 170A aircraft was not popular with Hungarian pilots. It caught fire very easily, its defensive armament was weak, and the view from the cockpit was considered unsatisfactory, as a result of which the He 170A was soon removed from service.

£52 /Zt

The Ju 52/3m transport aircraft was assembled in Budapest from components supplied partly from German factories and partly manufactured in Hungary. The first assembled copy of the Ju 52/3t left the assembly line in January 1944, a total of 26 aircraft were completed, of which 4 were delivered to the Luftwaffe, and the rest to the Hungarian Air Force.

Ju 86K

The first Ju 86K-2 bomber from an ordered batch of 66 vehicles was delivered to Hungary at the beginning of 1938, soon the 2nd and 3rd bombers were armed with these machines.

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shelves. In March 1939, 18 Ju 86K-2s from the 3rd Bomber Regiment were used during the armed conflict with Slovakia.

By the time Hungary declared war on the Soviet Union, the Ju 86K-2 bombers were in the 4./I and 4./P groups. However, in 1942 the aircraft was withdrawn from service, although it continued to be used for pilot training.

Ve.2000

In December 1939, Hungary purchased 70 Italian Ke.2000 aircraft and acquired the right to license their production. Licensed aircraft were produced by the MAMAO company under the name "Neja". The first deliveries of Italian aircraft began in April 1940, and licensed ones were produced from the end of 1942. The total number of aircraft produced by MAVAG was 192.

The first Re.2000 aircraft (6 machines) were tested by the Hungarians in combat conditions at the very beginning of the war with the USSR. At the beginning of 1942, 1/1 and 2/4 squadrons from a separate fighter group of the 2nd air brigade already had 13 aircraft each, but by the end of the year only one active link remained in this group. In subsequent retreats in January 1943, the remaining Ke.2000s were either lost or destroyed by ground personnel. In Hungary, fighter squadrons began to be replenished with Bf 109 aircraft from Germany, and the Be.2000 was gradually transferred to air defense units and schools for advanced training of flight personnel.

SM75

In 1939, the Hungarian aviation industry built five licensed 5.M.75 aircraft from the Italian company Savoia Marchetti. These aircraft, capable of carrying up to 30 people, were used in military transport aviation.

6. ROMANIA

Relations between some countries of Eastern and Southeastern Europe HakaHyHe of the Second World War were quite tense due to mutual territorial claims. As mentioned above, the Hungarians sought to re-annex the territories that they had ceded to their neighbors as a result of the end of the First World War. In response to this, an agreement was signed between Czechoslovakia, Yugoslavia and Romania on the creation of a defensive alliance, the so-called "Little Entente". However, contradictions arose within this union. In particular, the Romanians, in a situation where Germany began to threaten Czechoslovakia in 1939, contrary to the agreement, refused to allow Soviet military units to pass through their territory to help the Czechs.

Romania, together with Germany on June 22, 1941 entered the war against the USSR. At the beginning of the war, the Romanian Air Force was armed with: fighters He 112, Bf 109E, IAR 80, PZL R-1Sh, bombers PZL R-37, He 111, M.V.210, JRS-79B, "Potez" 633, scouts | AK 37, [AK 38, IAR 39, etc. In November 1942, Soviet troops defeated two Romanian armies that were part of the German group near Stalingrad. Most of the units that survived the battles were sent home in early 1943. The remaining units were used for another year in the fight against partisans and to protect the Black Sea coast, but their morale was falling. At the beginning of 1944, the Romanians

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they were forced to return to the front, but during August the Soviet troops defeated the Romanians once again. On August 24, 1944, Romania declared war on its former ally Germany, and the Romanian troops came under the command of the Red Army. As part of the 5th Air Army of the 2nd Ukrainian Front, Romanian aviation carried out air support for Soviet units until the end of the war.

"IAR"

ZAV-37/ IAR-38/ IAR-39

The AK-37 light bomber and reconnaissance aircraft was developed by the AK company (Societatea Industrie Aeronautica Romana), the prototype first flew in 1937. The AK-37 biplane aircraft was put into production at the end of 1938. and was built in the amount of 50 copies.

In 1939, the IAK-38 variant appeared (75 copies), as a two-seat short-range reconnaissance aircraft, a light bomber and a three-seat general purpose aircraft. It had an increased span of the upper wing, a redesigned cabin and landing gear, and a BMW 132ÿ-1 engine with a capacity of 700 hp was used as a power plant. With. The next modification was the light bomber IAK-39 (200 units). By the end of 1940, IAK biplanes were in service with the Romanian Air Force, they took part in the war against the USSR in large numbers.

Characteristics of TAK-37: crew - 3 people, power plant - 1 IAR 14 KITC32 engine with a capacity of 870 liters. With. (649 kW), wingspan - 12.22 and their area - 35.7 m, aircraft length - 9.5 m, height - 3.97 m, empty weight - 3189 kg, takeoff weight - 3459 kg, maximum speed - 335 km / h at an altitude of 3200 m, cruising speed - 270 km / h, range - 650 km, climb time 2000 m - 4.1 min, service ceiling - 8000 m, armament - two 7.7-mm guns bolts and 600 kg of bombs.

Characteristics of GAK-Z9A: crew - 3 people, power plant - 1 engine IAK 14 KIVC32 with a capacity of 870 liters. With. (649 kW), wingspan - 13.1 m and their area - 40.3 m², aircraft length - 9.6 m, height - 3.99 m, empty weight - 3085 kg,

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maximum speed - 336 km/h at an altitude of 3200 M, range - 1050 km, service ceiling - 8000 m, armament - three 7.92-mm machine guns and 288 kg of anti-personnel bombs.

1AV-80 LAV-81

Work on assembling the first sample of the fighter, which received the designation IAB-30, began in the spring of 1938, and for the first time the machine took to the air in April of the following year. By the end of 1940, 20 production aircraft were built, and by the summer of 1941, the 2nd Fighter Flotilla was re-equipped with new aircraft. Preparing for the war with the USSR, the 59th and 60th squadrons from the 2nd flotilla moved to the border areas by June 21, from where the IAV-80 aircraft made the first sorties in the outbreak of the war.

At the end of July, squadrons with IAK-80s already in the 4th Luftwaffe Air Fleet supported the offensive of the 3rd and 4th Romanian armies in Moldova and Ukraine. In 1942, the TAK-80 fighters began to be gradually transferred to the air defense units, where they acted quite successfully against American aircraft. So, for example, | On August 1943, an armada of 177 American bombers flew out to attack eight large oil refineries in the vicinity of Ploiesti, which produced more than a third of the required amount of fuel for the Luftwaffe and the armored forces of the Wehrmacht. Reflecting the American raid, IAK-80 fighters shot down 24 bombers, while losing only three of their own.

cars.

The total number of produced aircraft [AK-80 was 437 copies, the aircraft was built in the following versions:

fighter TAK-80 with four 7.92-mm machine guns "Browning" FN;

fighter JAK-80A with four 7.92-mm machine guns "Browning" FN and two 13.2-mm machine guns Browning;

1AK-80V fighter — TAK 80A modification with improved radio equipment:

dive bomber [AK-81 - modification [AK-80 with four 7.92-mm machine guns "Browning" FN or two 7.92 mm machine guns "Browning" FN and two 13.2 mm

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Browning machine guns, a 250 kg bomb under the fuselage and four 50 kg bombs under the wing;

dive bomber IAR-81A — modification [AK-80A with six 7.92-mm machine guns "Browning" FN, 250 kg bomb under the fuselage and four 50 kg bombs under the wing; |

long-range fighter IAR-81B with two drop fuel tanks and additional two 20 mm Oerlikon or Ikaria cannons;

1AK-81S fighter-bomber with two MG 151 cannons and four 7.92 mm machine guns, a 250 kg bomb under the fuselage and four 50 kg bombs under the wing.

Characteristics of the GAK-80A: crew - | man, power plant - | engine [AK 14K115 with a capacity of 1025 liters. With. (764 kW), wing span - 10.52 m and its area - 15.97 m², aircraft length - 8.97 m, height - 3.6 m, empty weight - 1780 kg, takeoff Bec - 2550 kr, maximum speed — 510 km/h at an altitude of 4500 m, cruising speed — 330 km/h, time to climb 4500 m — 5.6 min, range — 940 km, service ceiling — 10,500 m, armament — four 7.92 mm Browning FN machine guns and two 13.2 mm Browning machine guns.

Foreign aircraft

Ag 196

A small batch of Ag 196A aircraft was received from Germany. In Romania, these aircraft were in service with the 101st and 102nd reconnaissance squadrons from the end of 1943.

Bf 109 |

The Romanian Air Force began to receive BE 109G fighters at the beginning of 1943. Together with IAR-80 fighters, they covered oil fields and oil refineries. By the summer of the same year, four squadrons of the 1st Romanian Aviation Corps, which operated on the Soviet-German front as part of the G Air Corps of the Luftwaffe, received Bf 109G-6 and Bf 109G-8 aircraft.

Gradually, the numerical strength of the Romanian aviation on the Soviet-German front began to decline. By February

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1944, only one Romanian squadron with Bf 109G-6 continued to be based in the Crimea. In early September, the remaining Romanian BE 109G fighters were already supporting the offensive of the Soviet troops across the river. Rod.

"Blenheim" MK.!

In November 1939, a batch of 13 Blenheim Mk.I medium bombers built by the English company Avro was delivered to the Romanian Air Force. They took part in the fighting against the Soviet Union.

Characteristics of "Blenheim" MK.I: crew - 3 people, power plant - 2 engines "Mercury" USh with a capacity of 840 hp each. With. (627 kW), wingspan - 17.17 m and its area - 43.57 m², aircraft length - 12.12 m, height - 3.0 m, empty weight - 3673 kg, take-off weight - 5668 kg, maximum speed - 459 km/h at an altitude of 4572 m, range - 1810 km, service ceiling - 8315 m, armament - two 7.7 mm machine guns and up to 454 kg of bombs.

Not 112

In early 1939, the Romanian government ordered a batch of 24 He 112Bs from Heinkel to equip two squadrons. Deliveries to Romania began in the spring of 1939, and in September of the same year, both squadrons were fully equipped. At the very beginning of the war with the Soviet Union, one squadron was part of the air defense of Bucharest, and the other squadron operated on the southern flank of the Soviet-German front. After the capture of Odessa, the surviving machines began to be transferred to training units, the last He 112V aircraft was withdrawn from the combat unit in mid-1942.

Hs 129

The VIII air wing of the Romanian BBC included German attack aircraft Hs 129. At the time of the surrender of Romania, 32 copies remained. After the entry of Romania into the war against Germany, the remnants of the III and VI air wings with a small number of Ju 87Ds were included in the VIII air wing.

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315-798/JRS-79B

In 1938, two squadrons of the Romanian Air Force received 24 SM.79 aircraft with engines [AK K14-1 (licensed engine "apote-Kydp"). In the same year, the Romanians ordered another 24 aircraft modified for the German Leto 211Da engines. These aircraft received the Romanian designation L5-79V (Lito Italian 5.79V). In 1940, licensed production of such aircraft was launched in Romania at factories in Brasov and Bucharest. The Romanian-built aircraft were designated JRS-79B (Junkens-Romania-Savoia 79B).

By the beginning of the war with the Soviet Union, the Romanian BBC had four squadrons with SM79 aircraft, they fought in Moldova and southern Ukraine. In the winter of 1941/42, these squadrons were sent to reform, and then to Stalingrad, where they suffered heavy losses. In April 1944, the surviving aircraft acted as night bombers against the Soviet troops advancing in Moldova. After the surrender of Romania on August 23, 1944, the 72nd and 82nd Romanian squadrons, armed with JRS-79B, He 11 and Ju 88, acted against German troops retreating from Slovakia. The number of JRS-79B aircraft built was 61 copies.

Characteristics of the JRS-79B: crew — 5 people, power plant — 2 Leto 211 Pa engines with a capacity of 1200 hp each. With. (894 kW), wingspan - 21.2 m, aircraft length - 16.2 m, height - 4.1 m, empty weight - 11,525 kg, maximum speed - 411 km / h at an altitude of 5000 m, armament - three 13.2 mm Browning FN machine gun and 900 kg of bombs.

m.v. 210

The medium bomber MB 210 was developed by the French company "Maurice Bloch" in 1933. Before the war, Romania purchased 24 examples in the MB 210 BNS variant.

Characteristics of P.210 BN5: crew — 5 people, power plant — 2 Gnome Rhone 14N 10/11 engines with a capacity of 895 hp. With. (667 kW), wing span - 22.8 m, its area - 62.5 m², aircraft length - 18.9 m, height - 6.69 m, empty weight - 6400 kg, take-off weight - 10 200 kg, maximum

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speed — 322 km/h at an altitude of 3500 m, cruising speed — 240 km/h, range — 1700 km, time to climb 4000 m — 12.0 min, service ceiling — 9900 m, armament — three 7.5 mm machine gun and 1600 kg of bombs.

Potez 633

In 1937, Romania purchased a batch of 20 Potez 633B2 light bombers from the French company Potez. In April of the following year, another contract was signed for the supply of an additional batch of 20 P.633B2 aircraft to Romania.

Features "Potez" 633B2: crew - 2 people, engine installation - 2 engines "Gnome Rhoéne" 14N M4 / M5 with a capacity of 710 hp each. With. (529 kW), wing span - 16.0 m and its area - 32.7 m², aircraft length - 11.07 m, height - 3.62 m, empty weight - 2600 kg, take-off weight - 4210 kg, max. maximum speed - 439 km / h at an altitude of 4200 m, cruising speed - 320 km / h, range - 1300 km, time to climb 4000 m - 8.5 min, practical ceiling - 8000 m, armament - two 7.7 mm machine gun and 400 kg bombs.

PZL R-11

In the second half of the 30s. Polish fighter PZL P-11 was actually the main type of fighter in the Romanian Air Force. On June 22, 1941, two groups of the 3rd Air Flotilla included six squadrons, which included 153 serviceable P-11 and P-11f fighters. They participated in the battles in Moldova and Ukraine as light attack aircraft. The obsolete machines suffered heavy losses, by August 18 only 24 fighters remained in service.

At the beginning of 1942, three squadrons with R-11 fighters were transferred to naval aviation to provide cover for convoys heading from Romanian ports to Odessa, and three more squadrons were transferred to the air defense system. From the middle of 1942, R-11 fighters began to be replaced by TAK-80 fighters.

Characteristics PZL R-11: crew - 1 man, power plant - 1 engine "Spote-Kyype" 9Kt5e with a capacity of 595 liters. With. (444 kW), wingspan - 10.72 m, wing area -

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17.9 m², length of the aircraft - 7.55 m, height - 2.75 m, empty weight - 1147 kg, takeoff weight - 1650 kg, maximum speed - 276 km/h at the ground, cruising speed - 250 km / h, range - 600 km, climb time 5000 m - 7.0 min, service ceiling - 8040 m, armament - two 7.9-mm machine guns.

PZL P-24

Six P-24E aircraft, a further development of the P-11 fighter, were built by the Polish company PZL according to the terms of reference of Romania, they were equipped with a Gnome-Rhone 14Kps32 engine with a capacity of 900 hp. With. Soon, the TAK company built under license 30 aircraft of the P-24E variant with a licensed 14KMs36 engine with a capacity of 940 hp. with., produced by the same company. At the end of 1939, the production of machines of the P-24F and P-24G variants began.

Features PZL P-24F: crew - 1 man, power plant — 1 Gnome Rhone 143 engine, 1100 hp. With. (820 kW), wing span - 10.68 m and its area - 17.9 m², aircraft length - 7.6 m, height - 2.69 m, empty weight - 1330 kg, takeoff weight - 1915 kg,

maximum speed — 430 km/h, cruising speed — 275 km/h, time to climb 5000 m — 5.6 min, range — 550 km, service ceiling — 10,500 m, armament — two 20-mm guns, two 7.9 mm machine gun and 50 kg bombs.

Blenheim MK!

14 M. and V. Kozyrev

7. SLOVAKIA

In 1939 the Slovaks declared their independence. The new state became a loyal ally of Germany, which the Germans allowed to create their own armed forces and handed over Czechoslovak weapons stored in military depots on the territory that had ceded to Slovakia. The Slovaks supported the German invasion of Poland in September 1939, occupying territory that the country's leadership claimed belonged to Slovakia. In the first days of the outbreak of the war against the USSR, the Slovak army corps was part of the German Army Group South. During the Slovak uprising in August-October 1944, the united squadron, consisting of B-534, 5-328 and Bf 109 aircraft, fought against the Germans, providing assistance to the insurgent population. At the same time, the 1st Slovak Fighter Regiment was formed as part of the Soviet Air Force, the basis of which was La-5 aircraft.

"Avia"

B-534

B-534 aircraft developed by the Czechoslovak company Avia were used by Slovakia in the spring of 1939 in a short border war with Hungary and in September of the same year against Poland. Three Slovak squadrons armed with B-534 aircraft entered the war against the Soviet Union, but by the middle of 1942 the surviving aircraft were converted into training aircraft cars.

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Ba-122/Bs-122

In 1940, the Slovak BBC had a training squadron with Avia's Ba-122 (10 aircraft) and Bs-122 (13 aircraft) biplanes, which were used for the initial training of pilots. During the Slovak uprising in 1944, part of the aircraft flew over the front line and landed at Soviet airfields. The rest of the aircraft provided air support to the Slovak insurgents. However, these planes were destroyed during the German air raids that took part in the suppression of the uprising.

Characteristics of the Ba-122: crew - 1 person, power plant - 1 engine "Avia" KK-17 with a capacity of 430 liters. With. (321 kW), wingspan - 8.85 m, aircraft length - 6.8 m, empty weight - 861 kg, takeoff weight - 1080 kg, maximum speed - 270 km/h ground, range - 575 KM, practical ceiling - 7000 m.

Letov

S-16

Biplane aircraft developed by Letov until the mid-1930s. was the standard reconnaissance officer of the Czechoslovak Air Force. By the beginning of the war, it was obsolete and was used in the Slovak Air Force for training purposes and as a communications aircraft.

Characteristics S-16: crew - 2 people, power plant - 1 engine "Lorraine-Dietrich" with a capacity of 450 liters. With. (336 kW), wingspan - 15.3 m, aircraft length - 10.22 m, empty weight -

- 1400 kg, maximum speed - 230 km/h of land, practical ceiling - 6500 m, armament - 3 machine guns.

5-328

Most of the Czechoslovak 5-328 biplanes captured by the Germans were in service with the Luftwaffe and HOBbIX of the Slovak Air Force, a small number of machines were later transferred to Bulgaria. Aircraft 5-328 participated in the BOO-armed conflict with Hungary, inflicting daytime bombing

MO 403

attacks on concentrations of enemy troops, and also took part in the German attack on Poland in September 1939 and acted on the Soviet-German front from the very beginning of the war. After the defeat of the Slovak uprising, most of the 5-328 aircraft were taken by their crews to the USSR, where they took part in the hostilities against the Germans.

Characteristics 5-328: crew - 2 people, power plant - 1 engine "Pegasus" PM-2 with a capacity of 635 liters. With. (474 kW), wingspan - 13.7 m and their area - 67.1 m², aircraft length - 10.4 m, height - 3.4 m, empty weight - 1680 kg, maximum takeoff weight - 2675 kg, maximum speed - 280 km/h at an altitude of 1800 m, range - 700 km, time to climb 5000 m - 17.0 min, service ceiling - 7200 m, armament - four 7.7 mm machine guns and 500 kg of bombs .

"CKD"

E-39

The E-39 biplane was developed in 1931 by CKD-Praga. It was used in the BBC of Czechoslovakia, and later Slovakia, for training, training and communications. The total number of aircraft built in versions E-39, E-39G, E-39N, E-39NZ and E-39M was 234 units.

Characteristics of the E-39N: crew - 2 people, power plant - 1 Waltero NZ engine with a capacity of 120 liters. With. (89 kW), wingspan - 10.0 m, aircraft length - 7.49 m, empty Bec - 610 kg, takeoff Bec - 825 kg, maximum speed - 162 km / h at the ground, range - 450 km, practical ceiling - 3700 m.

Foreign aircraft

Bf 109

In November 1942, a Slovak squadron armed with BE 109 fighters was formed as part of the Luftwaffe. squadrons in the southern sector of the Soviet German front

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that. From the beginning of 1944, the squadron operated as part of the air defense of Bratislava, but on July 26, during the interception of American B-17 bombers, most of the squadron's aircraft were destroyed by R-38 escort fighters.

Em 189 During 1942, the Germans supplied the Slovak Air Force with a batch of 14 reconnaissance aircraft Fw 189ÿ-1.

8. FINLAND

Finland's participation in World War II began with the Soviet-Finnish War (11/30/39 - 03/12/40). The main reason for this war was the concern of the leadership of the USSR about the expansionist policy of Nazi Germany, as well as the fact that Finland could join Germany in a future war against the Soviet Union. At that time, military bases, arsenals, various kinds of fortifications, etc. were built in Finland at an accelerated pace, and their construction was carried out with the help of foreign specialists, including German ones. An analysis of the available data showed that some military facilities were designed for such a number of troops that significantly exceeded the capabilities of Finland. For example, military airfields, built by the beginning of 1939 with the help of German specialists, were able to receive 10 times more aircraft than the Finnish Air Force had.

Finland itself did not pose any threat to the Soviet Union, however, the question was in the strategic position of Leningrad, since only 32 km from it on the Karelian Isthmus a powerful system of long-term fortifications (the Mannerheim system) with a length of 135 km was created and up to 90 km deep. In the context of the outbreak of World War II, the possibility of the Germans creating naval bases in Finland, from which it was possible to control the Gulf of Finland and limit the actions of the Baltic Fleet of the USSR, was not ruled out. The Soviet Union began to negotiate with Finland, offering to exchange border lands

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and organize a Soviet naval base in the Gulf of Finland, but the Finns took a hard line and rejected the proposals of the Soviet side. The reason for the start of the war was the provocative artillery shelling of the Soviet troops from the territory of Finland on November 26, as a result of which there were casualties among the Soviet military personnel.

The Finnish Air Force came into action from the very first days of the war, and in December Finland purchased 44 American-made B-239 Buffalo aircraft, increasing the number of its fighters to 120 aircraft. In addition to Toro, 58 reconnaissance aircraft were in service, although many of them were already obsolete. By February, Soviet troops advanced on the Karelian Isthmus, and by the beginning of March, the Finnish army was already on the verge of complete annihilation. Despite this, Finland's sovereignty was preserved, as its government quickly agreed to the Soviet peace proposals, and on March 13, 1940, hostilities ceased.

In August 1940, under the pretext of strengthening its positions in the northern regions of Norway, Germany concluded an agreement with Finland on the passage of German troops through Finnish territory. The subsequent German-Finnish agreement in December 1940 allowed the stationing of German troops in Finland itself, and by the spring of 1941 the Finnish military was already cooperating with the German high command in planning an operation to invade the Soviet Union (Plan Barbarossa). "). After the German attack on the USSR, Finland allowed German troops to pass through its territory to the north with the aim of subsequently capturing Murmansk, and aviation of the 5th Air Force of the Luftwaffe was stationed at the airfields in Finland and Northern Norway. Finland itself did not declare war on the Soviet Union and did not take military action until the Soviet aviation inflicted a massive strike on the morning of June 25, 1941 on 19 airfields where Luftwaffe units were based, preparing for a raid on Leningrad. As a result, the Finnish Prime Minister stated in his speech that Finland was now at war with the Soviet Union. The Finnish army went on the offensive on the Karelian Isthmus and by August 1941 reached the pre-war borders, by December the Finns had almost reached the outskirts of Leningrad.

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The Germans established complete control over the Baltic Sea, blocking the Soviet fleet in the Gulf of Finland, which ensured the safe training of submarine and warship crews in the Kriegsmarine in the Baltic, as well as the unhindered transportation of strategic raw materials to Germany, including nickel from Finland and iron ore from Sweden.

The role of the Finnish Air Force during the war with the USSR was actually reduced to performing air defense tasks to intercept Soviet bombers, support their ground forces, and also carry out reconnaissance and transport flights in the southeastern part of Finland. The massive offensive of the Soviet troops in the summer of 1944 finally convinced the Finnish government that the country needed to be withdrawn from the war. The armistice with the Soviet Union was signed in September 1944, one of the terms of the agreement was Finland's entry into the war on the side of the anti-Hitler coalition. After the armistice, Finnish aviation took part in the fighting in Northern Finland (Lapland) against the Germans. The basis of Finnish fighter aviation was foreign-made aircraft: Dutch, Italian, French, American and German. The basis of the bomber aviation was the British Blenheim aircraft.

VL

"Kotka"

The prototype of the biplane aircraft under the designation "Kotka" | was built by Valtion Lentokonetehtäas in 1931, under the designation Koka P, 6 vehicles were produced in the Naval reconnaissance and light bomber variant. These aircraft were in service from 1939 to 1944, at the end of hostilities they were used as training aircraft and tugs.

Characteristics of "Kotka" P: crew - 2 people, power plant - | engine "Wright" K-1820-E with a capacity of 575 liters. With. (429 kW), wingspan - 12.7 m, aircraft length - 10.3 m, take-off weight - 2580 kg, maximum speed - 225 km / h, armament - 2 machine guns and 300 kg of bombs.

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Myrsky

In June 1939, the BBC of Finland issued a contract to the Finnish company VL ("Valtion Lentokonetehtäas") to develop a new high-speed fighter. When creating the aircraft, the experience of the production of the licensed D-XXI aircraft was used. The first prototype under the designation The Myrsky I, equipped with the American Pratt & Whitney K-1830-SC3G engine, flew on December 23, 1941. In February 1944, the fourth prototype was handed over to the HLeLv 26 squadron for military trials.

Based on the test results, it was decided to release a serial model of the aircraft under the designation "Myrsky" P. By July 1944, the first 14 serial aircraft were delivered to the TLeLv 12 squadron. These aircraft managed to take part in hostilities before the surrender of Finland in September 1944. The total number of aircraft built was 52 copies.

Characteristics of "Myrsky" P: crew - | man, power plant - | engine "Pratt & Whitney" R-1830-S1C3-G with a capacity of 1065 liters. With. (794 kW), wingspan - 11.0 M and ero area - 17.69 m², aircraft length - 8.35 m, height - 3.0 m, empty weight - 2332 kg, takeoff weight - 2950 kg, maximum - speed — 530 km/h at an altitude of 3250 m, cruising speed — 418 km/h, range — 500 km, service ceiling — 9000 m, armament — four 12.7 mm machine guns.

"Rugu" The experimental aircraft "Rugu" was first tested by the company

Valtion Lentokonetehtäas was put into production in 1939 under the designation Rugu P. During the war, it was used by the Finnish Air Force as a trainer and liaison aircraft, as well as for auxiliary purposes. The total number of aircraft built was 41.

Characteristics of Rugu P: crew - 1 person, power plant - 1 Wright R 975-E3 engine with a capacity of 440 hp. With. (328 kW), wingspan - 9.8 and its area - 12.7 m², length

aircraft - 7.55 m, height - 2.5 m, take-off weight - 1450 kg, maximum speed - 330 km / h, cruising speed - 290 km / h, range - 750 km, practical ceiling - 5800 m, armament - one 7.7 mm machine gun.

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Saaski

The \$445K aircraft, developed by Valtion Lentokonetehtä in 1928, was used during the war in two modifications - the 5485K P and the Saaskiv PA as a trainer and liaison aircraft. The total number of aircraft built was 33.

Characteristics of «Saaski» P: crew — 2 people, power plant — | Siemens engine with 120 hp. With. (89 kW), wingspan - 9.9 m, aircraft length - 7.9 m, take-off weight - 913 kg, maximum speed - 145 km / h.

Tuisku

In 1933, Valtion Lentokonetehtä developed a training and communication aircraft Tuisku. Airplane; KOTO - which could have a wheeled, ski or float chassis, was produced in two versions - "Tuisku" | with "Lycoming" R-680-BA engine and "Tuisku" P with engine Armstrong Siddeley. Used by the Finnish BBC from 1939 to 1944 as a reconnaissance and liaison aircraft. A total of 31 copies of both modifications were built.

Characteristics of "Tuisku" P: crew - 2 people, power plant - 1 engine "Armstrong Siddeley" with a capacity of 215 liters. With. (160 kW), wingspan - 12.1 and its area - 33.65 m², aircraft length - 9.35 m, height - 3.26 m, empty weight - 990 kg, takeoff weight - 1625 kg, maximum speed — 207 km/h, cruising speed — 170 km/h, range — 1150 km, time to climb 2000 m — 11.9 min, service ceiling — 4400 m, armament — 1 machine gun.

"Viima"

Training and communications aircraft "UN TA" was produced by "Valtion Lentokonetehtä" since 1935. The total number of aircraft built was 24 copies, of which 22 were machines of the "Viima" IT version. The aircraft was used by the Finnish Air Force from 1939 to 1944.

Characteristics of "Viima" P: crew - 2 people, power plant - | engine "Siemens Halske" Sh 14A with a capacity of 150 liters. With. (112 kW), wingspan - 9.2 and its area - 20.0 m²,

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aircraft length - 7.34 m, height - 2.74 m, take-off weight - 875 kg, maximum speed - 195 km/h near the ground, cruising speed - 150 km/h, range - 500 km, service ceiling - 4500 m.

Foreign aircraft

A-32

The A-32 biplane light reconnaissance bomber was developed by the Czechoslovak company Aero Touagpa Letadel Dr. Kabes. In 1929, the BBC of Finland became interested in the aircraft and purchased 16 aircraft, which received the designation A-32GR. The aircraft were in service until 1944.

Characteristics of the A-32: crew - 2 people, power plant - | engine "Walter-Jupiter" GU with a capacity of 450 liters. With. (336 kW), wingspan - 12.1 m and their area - 36.5 m², aircraft length

- 8.2 m, height - 3.1 m, weight of myc-togo - 1046 kg, take-off weight - 1915 kg, maximum speed - 225 km / h at an altitude of 2500 m, cruising speed - 319 km / h, range - 800 km, climb time 5000 m - 29.1 min, service ceiling - 5500 m, armament - 2 Vickers machine guns, 2 Lewis machine guns and 120 kg of bombs.

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B-239/E2A

By the autumn of 1938, the American firm Brewster (Brewster Aeronautical Corp.) completed the construction of a batch of 55 E2A-1 Buffalo aircraft ordered by the US Navy. However, according to some parameters, the aircraft did not fully meet the requirements of the fleet, so only 11 aircraft entered service with the US Navy, and the remaining 44 aircraft were acquired by Finland.

Aircraft sold to Finland were adapted for use from airfields: they dismantled the landing hook, lifeboat, lower cockpit glazing 3a-covered with an aluminum panel, and a more powerful HbIM engine was installed. The modified aircraft received the export designation B-239, 6 aircraft managed to take part in the Soviet-Finnish War.

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Since the Finnish BBC did not have specialized night fighters to repel the attacks of Soviet bombers, on March 7, 1943, the Commander-in-Chief of the Air Force, Lieutenant General Lundqvist, ordered the commander of the 3rd Fighter Regiment to organize the training of night fighter pilots. The plan of the command was to use the B-239 vehicles, intended only for daytime operations, as night fighters. Flight crew training began in the autumn of 1943, but the regular use of the B-239 as a night fighter failed. Before the capitulation of Finland in 1944, many B-239 fighters had Wright engines replaced by captured Soviet M-25, M-62 or M-63 engines.

Characteristics of B-239: crew - | man, power plant — | engine "Wright" K-1820-40 with a capacity of 1200 liters. With. (895 kW), wing span - 10.67 m and its area - 19.41 m², aircraft length - 8.02 m, height - 3.68 m, empty Bec - 2146 kg, maximum takeoff Bec - 3247 kg, maximum speed — 516 km/h at an altitude of 5000 m, cruising speed — 259 km/h, range — 1650 km, rate of climb — 698 m/min, service ceiling — 10,119 m, armament — four 12.7-mm machine guns and 90 kg of bombs.

Bf 109G

By the beginning of 1943 The German Bf 109G fighters appeared in service with the Finnish Air Force. One of the first aircraft to receive these aircraft was the HLeLv 34 squadron from the 3rd Aviation Regiment, followed by the HLeLv 24 and HLeLv 28 squadrons. Soviet bombers.

Soviet aviation carried out massive night raids on Helsinki on February 7, 17 and 27, 1944. Five days after the first raid, a squadron of night fighters from squadron JG 302 flew in from Germany under the command of Hauptmann Levens. The German squadron was based in Malmi, its main mission was to protect the night sky over Helsinki. Luftwaffe pilots, flying Bf 109G fighters, used the "Wilde Sau" tactic, which is required

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la or bright moonlight, or support spotlights. The squadron's aircraft flew to intercept the next two air raids and scored a small number of nighttime victories. In the summer of 1944, a group of Finnish pilots were trained in Germany as night fighter pilots.

The total number of BE 109G fighters received by Finland was 132 copies.

"Blenheim" MK.1 / Mk.IV

From June 1937 to July 1938, Finland received the first batch of 18 Blenheim MKLU aircraft from the English company Bristol; in 1940, deliveries of bombers continued. By the summer of 1941, the number of Blenheims, including those manufactured under license Mk.I, amounted to 97 Machines, but their activity during the war was minimal. This was partly due to the lack of high-octane gasoline, which was required for the normal operation of bombers. By September 1944, only 70 vehicles remained in service.

Characteristics of "Blenheim" MK.GU: crew - 3 people, power plant - 2 "Mercury" XV engines with a capacity of 905 hp each. With. (675 kW), wingspan - 17.17 m and its area - 43.57 m², length of the aircraft - 12.98 m, height - 3.0 m, empty weight - 4440 kg, takeoff weight - 6530 kg, maximum speed - 408 km / h, cruising speed - 319 km / h, range - 2350 km, practical ceiling - 8310 m, armament - five 7.7-mm machine guns and up to 600 kg of bombs.

"Lysander" MK.I

The LeLv 16 squadron was armed with several Lysander MK.I ground forces close support aircraft. These machines were purchased at the end of the 30s. from the English firm Westland.

Characteristics of "Lysander" Mk.I: crew - 2 people, power plant - 1 engine "Mercury" V with a capacity of 870 liters. With. (648 kW), wingspan - 15.24 m and its area - 24.15 m², aircraft length - 9.29 m, height - 3.5 m, empty weight

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ground - 1884 kg, take-off weight - 3402 kg, maximum CKO - 369 km / h at an altitude of 3000 m, range - 965 km, service ceiling - 7900 m, time to climb 1520 m - 4.1 min.

"Bulldog"

The Finnish Air Force was armed with 18 Bulldog Mk.IVA biplane fighters, which were purchased before the war from the British company Bristol Airplane Co. These machines, equipped with a Mercury VIS2 engine, had a ski or wheel chassis, reinforced ailerons and a heating system.

Characteristics of "Bulldog" Mk.IVA: crew - 1 man, power plant - 1 engine "Mercury" VIS2 with a capacity of 640 liters. With. (477 kW), wing span - 10.26 m and its area - 27.34 m², aircraft length - 7.77 m, height - 2.77 m, empty weight - 1220 kg, take-off weight - 1818 kg, maximum CKO - 360 km/h, service ceiling - 10,180 m, armament - two 7.7 mm machine guns and 36 kg of bombs.

CR-714

By the end of the Soviet-Finnish War, the Finnish Air Force received 7 French CR-714 Cyclone fighters developed by Codron (Societe Anonyme des Avion Caudron). However, these machines did not have time to take part in the hostilities.

After the signing by Finland and Germany of an agreement on mutual assistance in the war against the USSR, the Germans handed over to the Finnish Air Force another 70 SK-714 vehicles captured during the occupation of France.

From the very first days of the war against the Soviet Union, these machines took part in combat operations, performing the functions of air defense fighters. By the time the Soviet-Finnish armistice was signed, only 20 combat-ready CE-714 fighters remained in service.

Characteristics of CR-714 Cl: crew — | man, power plant - | Renault 12R 03 engine with 450 hp. With. (336 kW), wing span - 8.96 m and its area - 12.5 m², aircraft length - 8.63 m, height - 2.87 m, empty weight - 1400 kg,

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take-off Bec - 1750 kg, maximum speed - 465 km/h at an altitude of 5000 m, range - 900 km, time to climb 4000 m - 6.7 min, service ceiling - 9100 m, armament - four 7.5-MM machine gun.

O-XXI

Fokker D-XXI fighters first showed themselves in action during the Soviet-Finnish War. Then, in addition to the seven machines purchased from the Fokker company, another 38 licensed aircraft were added. Almost all D-XXI were part of the HLeLv 24 fighter squadron. The fighters took part in the hostilities in early December 1939, by the end of the war in March of the following year, losses among O-XX fighters amounted to 25%.

After the end of the Soviet-Finnish war, the surviving aircraft were handed over to the HLeLv 32 squadron, in addition, in early 1941, the Finnish government issued an order for the production of 50 licensed D-XXI aircraft with the Pratt & Whitney K-1535 engine. When Finland entered the war against the Soviet Union in June 1941, 97 D-XXI fighters were in service with squadrons HLeLv 32, HLeLv 30, TLeLv 12 and TLeLv 30.

Characteristics of D-XXI: crew — | man, power plant - | engine "Mercury" USH with a capacity of 730 liters. With. (544 kW), wing span - 11.0 and its area - 16.2 m², aircraft length - 8.22 m, height - 2.94 m, empty weight - 1442 kg, takeoff weight - 2050 kg, maximum speed — 460 km/h at an altitude of 5100 m, cruising speed — 385 km/h, time to climb 3000 m — 3.5 min, range — 950 km, service ceiling — 11,000 M, armament — four 7.9 mm machine gun.

"Fokker" S.X

In 1936, the Finns purchased four S.Kh. biplanes from the Dutch company Fokker, after successful military tests, a license was acquired for its production. By the beginning of World War II, S.Kh reconnaissance and light attack aircraft were in service with three squadrons of the Finnish Air Force.

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Characteristics of S.Kh: crew - 2 people, power plant - | Rolls-Royce engine "Kestrel" V with a capacity of 640 liters. With. (477 kW), wingspan - 12.0 and their area - 31.7 m², aircraft length - 9.2 m, height - 3.3 m, empty weight - 1450 kg, take-off weight - 2250 kg, maximum CKO-speed - 320 km/h, cruising speed - 270 km/h, range - 830 km, service ceiling - 8300 m, armament - one 7.9-mm machine gun and 400 kg of bombs.

Do 17

In early 1942, the Germans handed over 15 Do 17-2 bombers to the Finnish Air Force. These machines replaced the Blenheim bombers in the squadron PLeLv 46, and from April 1942 they began combat operations. By the time of the Soviet offensive in June 1944, PLeLv 46 had only five operational and four faulty Do 17s left.

Do 22

Four Do 22 aircraft were delivered by the Germans to Finland in 1941. These aircraft were in service with the T/LeLv 6 squadron and were used for coastal reconnaissance and anti-submarine operations.

G.50

Finland at the end of 1939 ordered 35 G.50 fighters from Fiat. The first batch of 14 vehicles arrived in February 1940, and another 12 vehicles were received in March. They immediately entered service with the squadron Helyk 26, but did not take part in hostilities until the armistice was signed in March. They began to actively participate in hostilities in 1941, remaining in service until May 1944.

The fighters were not adapted to operate in cold weather conditions, which created serious maintenance problems. In addition, the disadvantages (G.50) were considered to be the low weight of the total salvo of its two machine guns and the limited flight range.

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"Hawk"-75A

By June 1941, the Finnish BBC had 29 Curtiss Hawk-75A fighters (USA), which the Germans captured in France and then sold to Finland. In August 1941, all these machines were in service with the HLeLv 32 squadron, but by the end of the next year, the Finns had lost most of the Hawk-75A fighters. To make up for losses, the Germans handed over another 15 aircraft captured in the fall of 1942 during the invasion of a previously unoccupied part of France.

Characteristics of "NamK" -75: crew - 2 people, power plant - | Cyclone engine GR-1820-G3 875 HP With. (652 kW), wing span - 11.38 m and its area - 21.92 m², aircraft length - 8.71 m, height - 2.84 m, empty weight - 1803 kg, take-off weight - 3002 kg, maximum speed - 451 km / h at an altitude of 3000 m, cruising speed - 386 km / h, range - 1950 km, time to climb 700 m - 1.0 min, service ceiling - 9700 m, armament - one 12, 7 mm machine gun, three 7.62 mm machine guns and 136 kg of bombs.

E 13

Two copies of the Junkers E 13 aircraft, developed back in the 1920s, were used by the Finns during the war of 1939-1940. and 1941-1944

Characteristics of E 13a: crew - 2 people, power plant - 1 Junkers 15 engine with a capacity of 280 liters. With. (209 kW), wing span - 17.75 m and its area - 44.0 m², aircraft length - 10.5 m, empty weight - 1480 kg, takeoff weight - 2500 kg, cruising speed - 170 km / h, range — 850 km, service ceiling — 5100 m, number of passengers — 4 people.

MF11

In April 1940, several Norwegian Hover MF11 scouts flew to Finland to escape the German invasion. These float biplanes were confiscated and incorporated into the Finnish Air Force. During the war, MF11 aircraft were used for patrols in the northern part of Finland.

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Characteristics of MF11: crew - 3 people, power plant - | engine "Armstrong Siddeley" "Panther" II with a capacity of 575 hp. With. (429 kW), wingspan - 15.4 and their area - 53.3 m², length of the aircraft - 11.62 m, height - 4.44 m, empty weight - 1850 kg, take-off weight - 2850 kg, top speed 214 km/h at ground level, cruising speed 170 km/h, climb time

height of 1000 m - 3.0 min, practical ceiling - 5000 m, armament - three 7.62-mm machine guns and 300 kg of bombs.

M.5.406

At the beginning of the war with the Soviet Union, the Finnish Air Force had 87 French MS406 fighters. The first 30 machines were ordered by the government of Finland in 1939, the rest of the copies arrived after the occupation of France by German troops. During the war, 15 vehicles were modified and received the designation "Morko Mogaapö", they were equipped with Soviet M-105R engines with a capacity of 1100 liters. With.

5-218

The 5-218 biplane was also in service with the Finnish Air Force. A batch of 10 5-218 aircraft was purchased from the Czechoslovak company Letov, after which an additional 29 aircraft were built under license. They took part in the war as trainers and liaison officers.

aircraft.

Characteristics 5-218: crew - 2 people, power plant - 1 engine "Walter" NZ 120 with a power of 120 liters. With. (89 kW), wingspan - 10.0 m, aircraft length - 6.9 m, height - 3.1 m, empty weight - 510 kg, takeoff weight - 742 kg, maximum speed - 150 km / h, range - 375 km, time to climb 1000 m - 5.3 min, service ceiling - 4000 m.

9. CROATIA

After the end of the First World War, in accordance with the articles of the Treaty of Versailles, the Kingdom of Serbs, Croats and Slovenes was created, renamed Yugoslavia in 1929. By the beginning of the war, the Yugoslav Air Force was armed with 460 aircraft, both of its own construction and purchased from other countries.

After the occupation of Yugoslavia in April 1941, the German-Italian troops created the state of Croatia, which entered the war against the USSR on the side of Germany, sending three legions of volunteers to the Soviet-German front. Among them was the Croatian Air Force Legion, which consisted of two fighter squadrons with BE 109s and one bomber squadron with Do 17s. squadrons and were designated, respectively, HO, as 15.(kroat.) / JG-15 and 15. (kroat.) / JG 52, and bombers - in the 53rd bomber squadron under the designation 15. (Kroat.) / KO 53. They fought on various sectors of the Soviet-German front, for example, Croatian bombers raided Moscow, and fighters fought in the Kuban. By mid-1944, most of the Croatian pilots returned to their homeland to take part in the fight against the partisans.

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"Ikarus"

IK-3

After the capture of Yugoslavia, the Luftwaffe turned out to have 10 IK-3 fighters developed by Ikarus. These fighters were flown by Croatian pilots.

Characteristics IK-3: crew - 1 man, power plant — 1 Hispano-Suiza engine 12Ycrs with a capacity of 835 hp. With. (623 kW), wingspan - 10.3 m and its area - 16.5 m², length of the aircraft - 8.0 m, height - 3.25 m, weight nyc - 2068 kg, takeoff weight - 2630 kg, maximum speed - 527 km/h at an altitude of 5400 m, cruising speed - 400 km/h, time to climb 5000 m - 7.0 min, range - 785 km, service ceiling - 9460 m, armament - one 20 -mm cannon and two 7.92mm machine guns.

"Rogozharsky"

SIM-X

The SIM-X training aircraft was developed by the Yugoslav firm RogoZarski (Prva Srpska Fabrika Aviona Zivojin RogoZarski) in 1936. About 20 machines were in operation at three flight schools.

Characteristics of 51ÿ-ÿ: crew - 2 people, power plant - 1 Walter engine with a capacity of 120 hp. With. (89 kW), wing span - 10.0 m and its area - 18.5 m², aircraft length - 6.96 m, empty weight - 548 kg, take-off weight - 790 kg, maximum speed - 192 km / h near the ground, range - 500 km, practical ceiling - 5000 m.

Foreign aircraft

Bf 109

In July 1943 squadron 15.(kroat.)/JG 52 re-equipped from Bf 109E-7 to Bf 109G-2. However, by November of the same year, only six combat-ready fighters remained in this squadron. In February 1944, the squadron was based in the Crimea, having only four aircraft. Croats in summer

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received new fighters VI 109G-10, with which the squadron operated as part of the Luftwaffe until the end of the WAR.

"Blenheim" Mk.I

The Yugoslav government in November 1937 purchased two Blenheim Mk.I bombers, after which the construction of licensed vehicles began at the Ikarus plant. By the time of the German attack on Yugoslavia in the spring of 1941, there were 16 vehicles in service, in addition to them, the British delivered another 20 vehicles to the Yugoslavs. These planes fought against the Germans as part of the 1st and 8th bomber regiments of the Yugoslav Air Force. After the capture of Yugoslavia, the Germans handed over several surviving vehicles to the created Croatian Air Force.

Do 17

When Germany invaded Yugoslavia on April 6, 1941, the Yugoslav Air Force was armed with 70 license-built Do 17Ks. Several surviving aircraft captured by the Germans were recovered and in early 1942 transferred to the Croatian BBC. These aircraft were in service with the Croatian squadron, which became part of the bomber squadron KG 3 and operated in the central sector of the Soviet-German front.

After the loss of six aircraft, the squadron was returned to Croatia for resupply, and in July 1942 it returned to Russia under the designation 15.(kroat.)/KG 53. This squadron finally left the Soviet-German front in November 1942, then it was used against partisans in Yugoslavia.

10. VOLUNTEER AVIATION UNIT

Swedish squadron

From January 1940 until the end of the Soviet-Finnish war, the F19 squadron (Flottilj 19), made up of Swedish volunteers, fought in the Finnish BBC. This squadron was armed with Swedish biplane fighters J8A and B4, which were

licensed versions of British aircraft, respectively, Gladiator by Gloster and Hart by Hawker.

Characteristics of J8A: crew - 1 man, power plant — 1 engine "Mercury" UP15.3 with a capacity of 730 liters. With. (545 kW), wingspan - 9.85 m and their area - 30.0 m², aircraft length - 8.38 m, height - 3.17 m, empty weight - 1565 kg, take-off weight - 2156 kg, maximum speed - 407 km / h at an altitude of 4400 m, climb time 3050 m - 3.8 minutes, range - 708 km, service ceiling - 10,058 m, armament - four 7.7-MM machine guns.

Characteristics B4: crew - 2 people, power plant - 1 engine "Pegasus" 112 with a capacity of 510 hp. With. (380 kW), wingspan - 11.35 m and their area - 32.3 m², aircraft length - 8.94 m, height - 3.17 m, empty weight - 1148 kg, take-off weight - 2066 kg, maximum speed — 296 km/h at an altitude of 1500 m, time to climb 3050 m — 8.3 min, range — 756 km, service ceiling — 6507 m, armament — two 7.7 mm machine guns.

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Zston divisions

In July 1942, as part of the 127th Luftwaffe naval reconnaissance group, the 3rd squadron was equipped with volunteers from Ston. Armed with He 60 and Ar 95 aircraft transferred from the SAGr 125 group, the Zston squadron 3./SA.Gr.127 patrolled the Gulf of Finland, searching for Soviet submarines.

In October 1943, the Estonian group of night attack aircraft NSGr was formed. 11 (estnisch), which consisted of two squadrons. The Estonian group was armed with He 50a, Ag 66, RWD-8 and Fokker S.U-E. In order to prepare reinforcements in the winter of 1943/44, the Germans created a combat training group of night attack aircraft Erg.NSGr. "Ostland", which trained groups of cadets, divided according to nationality, among them was the Estonian group Erg. NSGr. Eastland. In addition, 10 pilots from NSGr. 11 (estnisch) was sent to Germany in June for training as fighter pilots.

NSG group. 11 (estnisch) and the group SA.Gr.127, of which only one squadron remained, operated until the end of September 1944, but | October, an order was signed on the immediate disbandment of all Estonian and Latvian aviation units. The reason for this was the regular flight of the Baltic pilots and aircraft mechanics from the ranks of the Luftwaffe, they packed several people into the cramped cabins of their cars and flew to the territory of neutral Sweden. The personnel who did not have time to run up were assigned to the 20th SS Grenadier Division, to the anti-aircraft units of the Luftwaffe and to the anti-aircraft units of the Estonian SS units.

The careers of 10 Estonian fighter pilots in the Luftwaffe were just as unsuccessful as those of their counterparts from the naval reconnaissance group and the night attack group. Three of the pilots died in air crashes during training, one pilot died while performing a combat mission, two deserted from the ranks of the Luftwaffe, flying on their Fw 190A aircraft to Sweden, the fate of four more is unknown.

Characteristics of CV-E: crew — 2 people, power plant — 1 Hispano-Suiza 450 hp engine. With.

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(336 kW), wingspan - 12.5 m and their area - 28.8 m², aircraft length - 9.5 M, height - 3.5 m, empty weight - 1250 kg, takeoff weight - 1850 kg, maximum speed - 225 km / h, range - 770 KM, practical ceiling - 5500 m.

Latvian divisions

In March 1944, the 12th NSGr Night Attack Group was formed. 12, which was armed with Bu 131, Ag 66, Go 145, as well as SV-5 aircraft, purchased by Latvia in 1935 from the Belgian company Stampe et Vertongen. Pilots from the Latvian Aviation Legion formed the basis of this group, and the replenishment was prepared in the combat training group Erg.NSGr. "Lettland" (Latvian). The Latvian legion also included the 385th anti-aircraft division based in Riga. In October 1944, just like the Estonian units, the Latvian Aviation Legion was disbanded, and the personnel were distributed among the Luftwaffe and SS units. |

Characteristics of 5U-5: crew - 2 people, power plant - | engine "Armstrong Siddeley" "Cheetah" IX with a capacity of 340 hp. With. (254 kW), wingspan - 10.5 m and their area - 26.7 m², aircraft length - 7.78 m, height - 2.9 m, empty weight - 1020 kg, take-off weight - 1570 kg, maximum speed - 277 km / h at an altitude of 2600 m, climb time 4000 m - 10.5 minutes, practical ceiling - 7250 m.

Aviation ROA

Together with the German troops, the so-called Russian Liberation Army (ROA), led by General Vlasov, fought against the Soviet Union. In December 1943, as part of the 6th air fleet (Luftflotte 6), created in May 1943 on the basis of the Ost air command (Lw.Kd.Ost), formed the 1st Russian squadron (1.Ostfliegerstaffel). This small unit, headed by the German Major Grasser, was based in Lida and was armed with Ag 66, So 145 and captured U-2 and UT-2 aircraft. Squadron

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completed about 500 sorties on the Soviet-German front, while losing 21 aircrew (9 killed and 12 wounded). Soon, as part of the 2nd flight school (2.FI.Schul. Div.), another Russian squadron was created, which operated on captured U-2 aircraft against partisans in Belarus. But after several pilots deserted from it, having gone into the forests to join the partisans, the Germans in July 1944 disbanded both Russian squadrons.

After the creation in November 1944 of the Committee for the Liberation of the Peoples of Russia (KONR), which was headed by General Vlasov, the Germans allowed the formation of aviation POA (Luftwaffe der KOA), which was supposed to include the 1st Aviation Regiment (in the Luftwaffe it designated as IL Fliegerregiment), an anti-aircraft regiment, a parachute battalion and a communications battalion. The aviation regiment consisted of a fighter squadron (16 Bf 109G-10), an attack squadron (12 Ju 87D), reconnaissance (2 Fi 156 and 2 U-2) and transport (2 Ju52/3m) squadrons, as well as training training squadron (2 Bf 109 and 3 U-2).

The fighter squadron was the first to take part in the hostilities, which at the end of February 1945 was transferred to the airfield in Nemetsky Brod (now Havlichkov Brod, Czech Republic). By April 13, an assault squadron arrived there, supporting the 1st Infantry Division of the POA, which was trying to delay the Soviet troops crossing the Oder. On April 20, the personnel of the 1st Aviation Regiment of the ROA, leaving their aircraft, headed south on foot in order to break through to the Americans. They succeeded, and the surrender took place on April 27, 1945 in the vicinity of Langdorf.

Characteristics of the U-2LNB: crew - 2 people, power plant - 1 M-11D engine with a capacity of 115 liters. With. (86 kW), wingspan - 11.4 and their area - 33.1 m², aircraft length - 8.17 m, height - 3.1 m, empty weight - 773 kg, take-off weight - 1400 kg, maximum speed - 134 km / h near the ground, climb time of 1000 m - 25.0 minutes, range - 450 km, practical ceiling - 1500 m, armament - one 7.62-mm machine gun and 350 kg of bombs.

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AVIATION COUNTRIES IN THE SECOND _ WORLD WAR

The book "Axis Aviation in World War II" is an encyclopedia of aircraft used by the air forces of Germany, Italy, Japan and their allies during World War II against the countries of the anti-Hitler coalition. These vehicles include aircraft, helicopters, gyroplanes and gliders that were built in the Axis countries in series or experimental batches and took part in one capacity or another in combat operations or auxiliary operations. These devices also include experienced

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